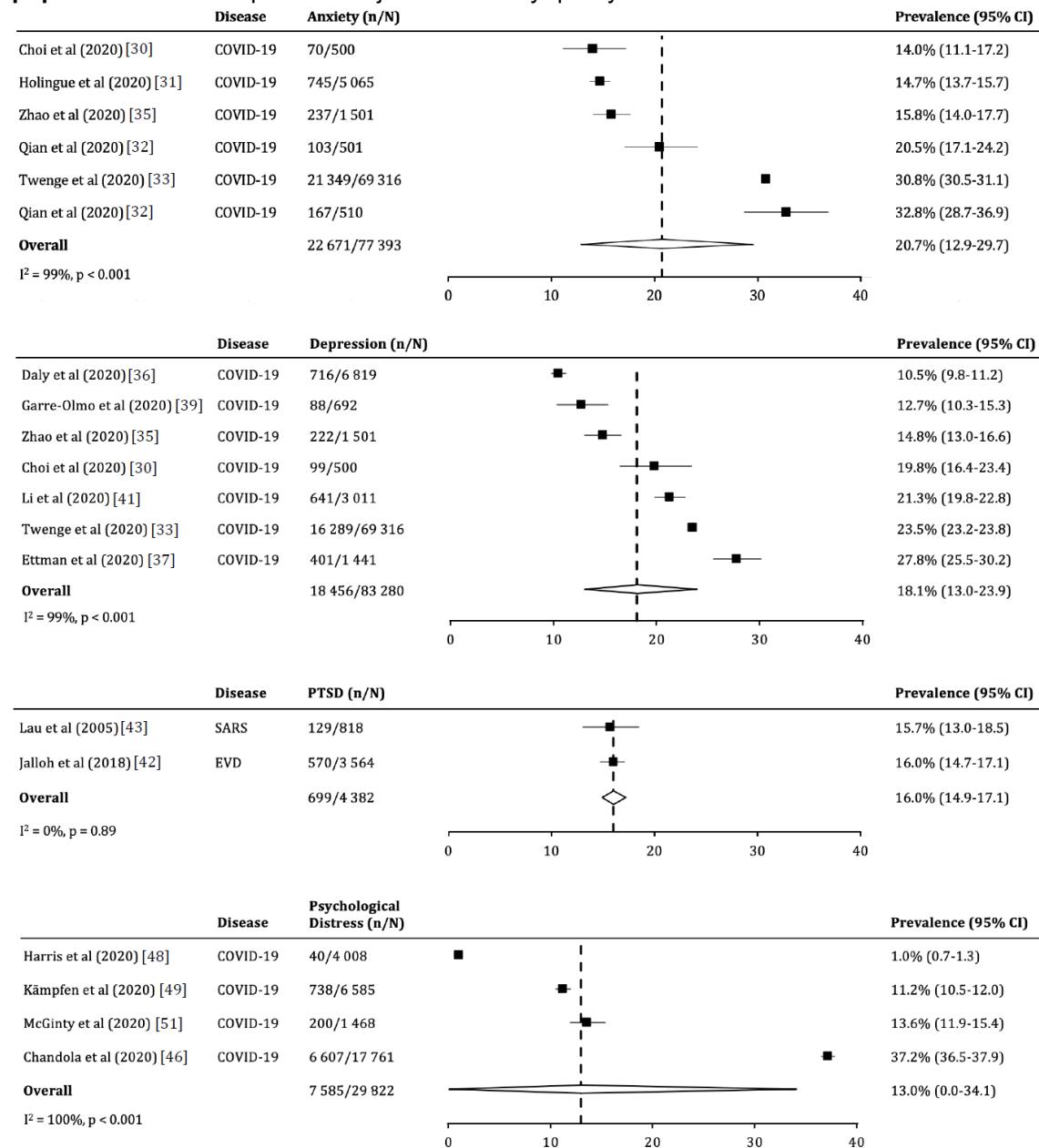


## Supplementary Information

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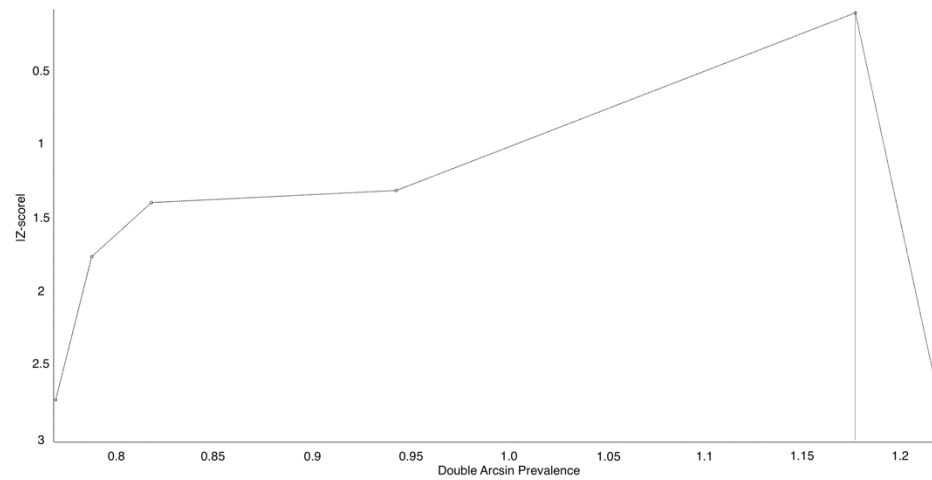
**Fig. S1. Forest plots of pooled prevalence of (A) probable anxiety, (B) probable depression, (C) suspected post-traumatic stress disorder, and (D) psychological distress in the general population. All forest plots are adjusted for study quality.**



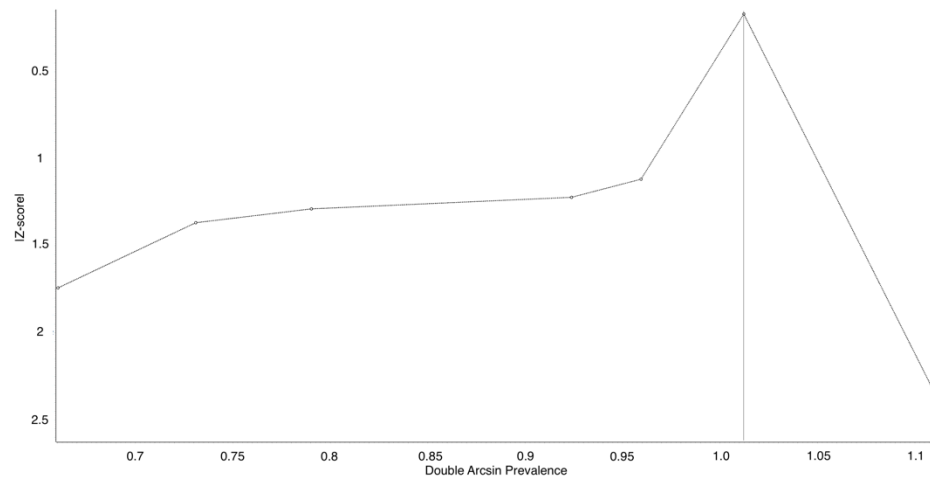
COVID-19=Coronavirus Disease 2019. EVD=Ebola virus disease. PTSD=post-traumatic stress disorder. SARS=severe acute respiratory syndrome.

**Fig. S2. Doi plots of pooled prevalence of (A) probable anxiety, (B) probable depression, and (C) psychological distress in the general population**

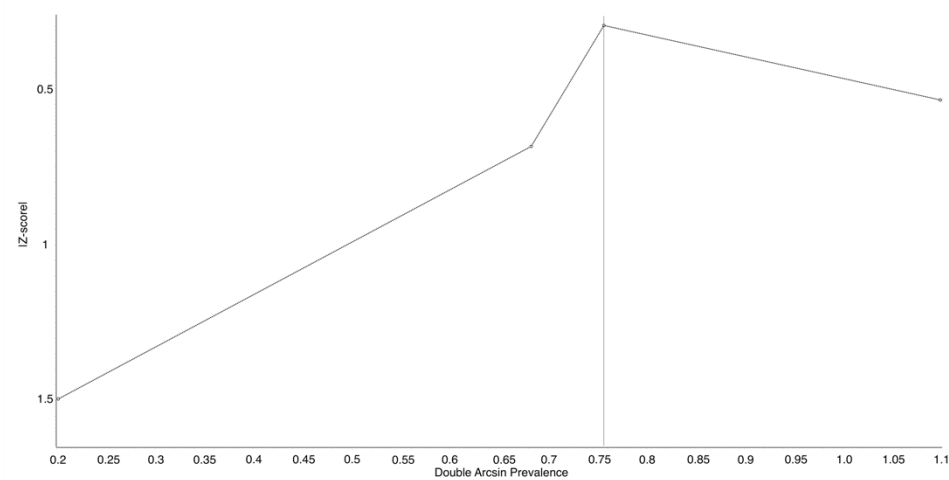
A.



B.



C.



Note: At least two studies are required to generate Doi plots.

**Table S1. Detailed search strategy**

We used search terms related to any novel outbreaks that were droplet- or airborne-transmissible, including general terms such as outbreak, epidemic, pandemic, influenza, avian flu, and more specific terms such as COVID-19, EVD, MERS, avian influenza A(H7N9), pandemic influenza A(H1N1), avian influenza A(H5N1), and SARS. The search strategy also included any terms related to mental disorders. MeSH terms and explosions of terms were applied where appropriate. Such search strategies casted a broader net to minimise the chance of missing key studies.

Database	Search string
CINAHL Plus	(TX ( "coronavirus" OR "COVID" OR "COVID-19" OR "SARS-CoV-2" OR "2019-nCoV" OR "severe acute respiratory syndrome" OR "SARS" OR "Middle East respiratory syndrome" OR "MERS" OR "ebola" OR "swine flu" OR "H1N1" OR "avian flu" OR "H5N1" OR "H7N9" OR "influenza" ) OR MH ( Disease Outbreak OR outbreak* OR epidemic* OR pandemic* )) AND (TX ( "mental health" OR "mental disorders" OR "mental illness" OR "depression" OR "depressive symptoms" OR "anxiety" OR "PTSD" OR "PTSS" OR "posttraumatic stress symptoms" OR "acute stress disorder" OR "acute stress symptoms" OR "suicide" OR "suicidality" OR "suicidal" OR "deliberate self-harm" OR "psychological wellbeing" OR "psychological well-being" OR "mental wellbeing" OR "mental well-being" OR "distress" OR "psychological" OR "psychiatric diagnoses" OR "alcohol" OR "substance use" ) OR MH ( mental health OR mental disorder OR mental illness OR mood disorder OR depression OR anxiety disorder OR trauma and stressor related disorder OR PTSD OR neurotic disorder OR suicide OR stress, psychological OR behavioural symptom OR schizophrenia OR psychotic disorder ))
Embase	((coronavirus or COVID or COVID-19 or SARS-CoV-2 or 2019-nCoV or severe acute respiratory syndrome or SARS or Middle East respiratory syndrome or MERS or ebola or swine flu or H1N1 or avian flu or H5N1 or H7N9 or influenza).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word]) or (*Disease Outbreak/ or *outbreak*/ or *epidemic*/ or *pandemic*/)) AND (("mental health" or "mental disorders" or "mental illness" or "depression" or "depressive symptoms" or "anxiety" or "PTSD" or "PTSS" or "posttraumatic stress symptoms" or "acute stress disorder" or "acute stress symptoms" or "suicide" or "suicidality" or "suicidal" or "deliberate self-harm" or "psychological wellbeing" or "psychological well-being" or "mental wellbeing" or "mental well-being" or "distress" or "psychological" or "psychiatric diagnoses" or "alcohol" or "substance use").mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword, floating subheading word, candidate term word] or ((*mental health/ or *mental disorder/ or *mental illness/ or *mood disorder/ or *depression/ or *anxiety disorder/ or *trauma/ and stressor related disorder/) or *PTSD/ or *neurotic disorder/ or *suicide/ or *stress, psychological/ or *behavioural symptom/ or *schizophrenia/ or *psychotic disorder/))

Database	Search string
PsycINFO	(coronavirus OR COVID OR COVID-19 OR SARS-CoV-2 OR 2019-nCoV OR severe acute respiratory syndrome OR SARS OR Middle East respiratory syndrome OR MERS OR ebola OR swine flu OR H1N1 OR avian flu OR H5N1 OR H7N9 OR Disease Outbreak OR outbreak* OR epidemic* OR pandemic*) AND (mental health OR mental disorder OR mental disorders OR mental illness OR mood disorder OR depression OR depressive symptoms OR anxiety disorder OR anxiety OR trauma and stressor related disorder OR PTSD OR PTSS OR posttraumatic stress symptoms OR acute stress disorder OR acute stress symptoms OR neurotic disorder OR suicide OR suicide OR suicidality OR suicidal OR deliberate self-harm OR psychological wellbeing OR psychological well-being OR mental wellbeing OR mental well-being OR distress OR stress, psychological OR behavioural symptom OR psychological OR psychiatric diagnoses OR alcohol OR substance use OR schizophrenia OR psychotic disorder)
PubMed	(coronavirus [All fields] OR COVID [All fields] OR COVID-19 [All fields] OR SARS-CoV-2 [All fields] OR 2019-nCoV [All fields] OR severe acute respiratory syndrome [All fields] OR SARS [All fields] OR Middle East respiratory syndrome [All fields] OR MERS [All fields] OR ebola [All fields] OR swine flu [All fields] OR H1N1 [All fields] OR avian flu [All fields] OR H5N1 [All fields] OR H7N9 [All fields] OR influenza [All fields] OR Disease Outbreak [MeSH] OR outbreak* [All fields] OR epidemic [MeSH] OR epidemic* [All fields] OR pandemic [MeSH] OR pandemic* [All fields]) AND (mental health [MeSH] OR "mental health" [All fields] OR mental disorder [MeSH] OR "mental disorders" [All fields] OR mental illness [MeSH] OR "mental illness" [All fields] OR mood disorder [MeSH] OR depression [MeSH] OR "depression" [All fields] OR "depressive symptoms" [All fields] OR anxiety disorder [MeSH] OR "anxiety" [All fields] OR trauma and stressor related disorder [MeSH] OR PTSD [MeSH] OR "PTSD" [All fields] OR "PTSS" [All fields] OR "posttraumatic stress symptoms" [All fields] OR "acute stress disorder" [All fields] OR "acute stress symptoms" [All fields] OR neurotic disorder [MeSH] OR suicide [MeSH] OR "suicide" [All fields] OR "suicidality" [All fields] OR "suicidal" [All fields] OR "deliberate self-harm" [All fields] OR "psychological wellbeing" [All fields] OR "psychological well-being" [All fields] OR "mental wellbeing" [All fields] OR "mental well-being" [All fields] OR "distress" [All fields] OR stress, psychological [MeSH] OR behavioural symptom [MeSH] OR "psychological" [All fields] OR "psychiatric diagnoses" [All fields] OR "alcohol" [All fields] OR "substance use" [All fields] OR schizophrenia [MeSH] OR psychotic disorder [MeSH])
Web of Science	((ALL=("coronavirus" OR "COVID" OR "COVID-19" OR "SARS-CoV-2" OR "2019-nCoV" OR "severe acute respiratory syndrome" OR "SARS" OR "Middle East respiratory syndrome" OR "MERS" OR "ebola" OR "swine flu" OR "H1N1" OR "avian flu" OR "H5N1" OR "H7N9" OR "influenza")) OR (TS=(Disease Outbreak OR outbreak* OR epidemic* OR pandemic*))) AND ((TS=(mental health OR mental disorder OR mental illness OR mood disorder OR depression OR anxiety disorder OR trauma and stressor related disorder OR PTSD OR neurotic disorder OR suicide OR stress, psychological OR behavioural symptom OR schizophrenia OR psychotic disorder)) OR (ALL=("mental health" OR "mental disorders" OR "mental illness" OR "depression" OR "depressive symptoms" OR "anxiety" OR "PTSD" OR "PTSS" OR "posttraumatic stress symptoms" OR "acute stress disorder" OR "acute stress symptoms" OR "suicide" OR "suicidality" OR "suicidal" OR "deliberate self-harm" OR "psychological wellbeing" OR "psychological well-being" OR "mental wellbeing" OR "mental well-being" OR "distress" OR "psychological" OR "psychiatric diagnoses" OR "alcohol" OR "substance use"))))

**Table S2. Selection criteria of studies**

**Inclusion criteria**

- 1) sampled a community exposed to the threat of novel epidemics
- 2) examined general population
- 3) reported prevalence or risk factors for mental disorders (assessed with clinical interviews or validated, standardised instruments that could provide a provisional diagnosis based on DSM or ICD) or suicidality (assessed with validated measures)
- 4) original research studies in peer-reviewed journals
- 5) published in English, Chinese, and Portuguese

**Exclusion criteria**

- 1) only examined emotional responses or other transdiagnostic outcomes (e.g. fear, insomnia)
  - 2) conference abstracts
  - 3) qualitative studies
  - 4) modelling studies
  - 5) examined specific subgroups (e.g. patients, quarantined individuals, and health-care professionals) which would have very different levels of exposure compared to the general population, and have been covered in prior reviews)
  - 6) examined population subgroups (e.g. college students, elderly, pregnant women, people with specific occupations)
-

**Table S3. Summary of validated, standardised mental health measures**

***Definitions of mental disorders***

We use the term probable as all except one study used screening instruments as opposed to diagnostic interviews. We used the term suspected PTSD as nearly all studies were conducted while the epidemic was ongoing, whereas PTSD is often assessed after single, well-defined events (e.g. terrorist attacks, natural disasters, physical or sexual abuse). Further, medical conditions such as life-threatening infections or being quarantined do not meet the current criteria for trauma for PTSD diagnosis[186, 187]. Nevertheless, PTSD has been reported for COVID-19 and other epidemics[11-13], and the term suspected PTSD would be consistent with the World Health Organization's (WHO) likelihood of diagnosis (lowest to highest) ranging from suspected to probable to confirmed[188]. Below lists the measures used by the identified studies.

***Probable anxiety***

Probable anxiety was assessed using validated screening instruments that could provide a provisional diagnosis, including Beck Anxiety Inventory (BAI)[189], Generalized Anxiety Disorder-2 Scale (GAD-2)[190], Generalized Anxiety Disorder-7 Scale (GAD-7)[191], Hamilton Anxiety Rating Scale (HAM-A)[192], Hospital Anxiety and Depression Scale (HADS)[193], Mini-International Neuropsychiatric Interview (M.I.N.I.)(194], PROMIS Emotional Distress, Anxiety, Short Form[195], Zung's Self-rating Anxiety Scale (SAS)[196]. All instruments and their cut-offs were validated against diagnostic interviews and had high sensitivity and specificity for probable anxiety.

***Probable depression***

Probable depression was assessed using validated screening instruments that could provide a provisional diagnosis, including Beck Depression Inventory (BDI)[197], Beck Depression Inventory (BDI-II)[198], Centre for Epidemiological Studies-Depression Scale (CES-D)[199], Five-item World Health Organization-Well-Being Index (WHO-5)[200], Hospital Anxiety and Depression Scale (HADS)[193], Mini-International Neuropsychiatric Interview (M.I.N.I.)(194], Patient Health Questionnaire-2 (PHQ-2)[201], Patient Health Questionnaire-8 (PHQ-8)[202], Patient Health Questionnaire-9 (PHQ-9)[203], Taiwanese Depression Questionnaire (TDQ)[204], Zung's Self-rating Depression Scale (SDS)[205]. All instruments and their cut-offs were validated against diagnostic interviews and had high sensitivity and specificity for probable depression.

***Suspected post-traumatic stress disorder (PTSD)***

Suspected PTSD was assessed using validated screening instruments that could provide a provisional diagnosis, including International Trauma Questionnaire (ITQ)[206], Mini-International Neuropsychiatric Interview (M.I.N.I.)(194], Primary Care Post-Traumatic Stress Disorder Screen for DSM-5 (PC-PTSD-5)[207], variations of Impact of Event Scale-Revised (IES-R)[208], Post-traumatic Stress Disorder Checklist-Civilian Version (PCL-C)[209], and Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)[210]. In some studies, the DSM diagnostic algorithm was used by the authors to indicate suspected PTSD. All instruments and their cut-offs were validated against diagnostic interviews and had high sensitivity and specificity for PTSD.

### ***Psychological distress***

Psychological distress was assessed using validated screening instruments, including Brief Symptom Inventory-18 (BSI-18)[211], Brief Symptom Inventory-53 (BSI-53)[212], COVID-19 Peritraumatic Distress Index (CPDI)[213], Five-item Brief Symptom Rating Scale (BSRS-5)[214], General Health Questionnaire-12 (GHQ-12)[215], General Health Questionnaire-28 (GHQ-28)[216], Hopkins Symptoms Checklist-10 (HSCL-10)[217], Kessler Psychological Distress Scale-6 (K6)[218], Kessler Psychological Distress Scale-10 (K10)[218], Mini-International Neuropsychiatric Interview (M.I.N.I.)[194], Patient Health Questionnaire-4 (PHQ-4)[219], Symptom Checklist-90 (SCL-90)[220], Self-reporting Questionnaire-20 (SRQ-20)[221]. All instruments and their cut-offs were validated against diagnostic interviews and had high sensitivity and specificity for psychological distress.

### ***Other mental disorders***

Acute stress disorder was assessed using Acute Stress Disorder Scale (ASDS)[222]. Alcohol use disorders were assessed using Alcohol Use Disorder Identification Test (AUDIT)[223], Alcohol Use Disorder Identification Test-Concise (AUDIT-C)[223], and Mini-International Neuropsychiatric Interview (M.I.N.I.)[194]. Agoraphobia was assessed using Mini-International Neuropsychiatric Interview (M.I.N.I.)[194]. Obsessive-compulsive disorder was assessed using Obsessive Compulsive Inventory-Revised (OCI-R)[224]. Panic disorder and social phobia were assessed by Mini-International Neuropsychiatric Interview (M.I.N.I.)[194]. All instruments and their cut-offs were validated against diagnostic interviews and had high sensitivity and specificity for the specific disorders.

### ***Suicidality***

Suicide rates were estimated using official data from national registers. Suicidal ideation and suicide attempts were assessed using Centre for Epidemiological Studies-Depression Scale (CES-D)[225], Depressive Symptom Inventory Suicidality Subscale (DSI-SS)[226], Mini-International Neuropsychiatric Interview (M.I.N.I.)[194], Suicide Behaviors Questionnaire-Revised (SBQ-R)[227], Suicidal Ideation Attributes Scale (SIDAS)[228], and Self-Injurious Thoughts and Behaviors Interview (SITBI)[229]. All instruments and their cut-offs were validated for assessing suicidal ideation.

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**Table S4. Adapted Newcastle-Ottawa scale**

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Total score: 0-9 (Low 0-3, Medium 4-6, High 7-9)[12, 20]

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**Cross-sectional studies** (*Patra et al 2015*[20])

- 1) Representativeness of the exposed sample
    - 1 mark for truly representative of the average in the community (all subjects or random sampling)
    - 1 mark for somewhat representative of the average in the community (non-random sampling)
    - 0 mark for selected group of users
    - 0 mark if no description of sampling strategy
  - 2) Selection of the nonexposed sample (*Anglin et al 2013*[21])
    - 1 mark if drawn from the same community as the exposed cohort
    - 0 mark if drawn from a different source
    - 0 mark if no description of the derivation of the non-exposed cohort
  - 3) Ascertainment of exposure (*revised*)
    - 1 mark for validated measurement tool for an exposure
    - 0 mark for non-validated measurement tool, but the tool is available or described
    - 0 mark if no description of the measurement tool
  - 4) Comparability (controlled for age)
    - 1 mark for yes
    - 0 mark for no
  - 5) Comparability (controlled for additional important factors, e.g., sex, education, occupation, income, marital status, baseline health or medical history (mental or physical)/pre-existing illness, or other appropriate confounders given the exposure and outcome)
    - 1 mark for yes
    - 0 mark for no
  - 6) Assessment of outcome (*Rogers et al 2020*[12]; *Ni et al 2020*[22])
    - 1 mark for independent blind assessment
    - 1 mark for record linkage
    - 1 mark for clinical diagnosis using ICD/DSM or a validated measure with a clinical cutoff indicating any psychiatric diagnosis
    - 0 mark for measures without clinical cutoff or newly conceived measures
    - 0 mark if no description
- 

**Cohort/ longitudinal studies** (*Patra et al 2015*[20])

- 1) Representativeness of the exposed cohort
    - 1 mark for truly representative of the average in the community (all subjects or random sampling)
    - 1 mark for somewhat representative of the average in the community (non-random sampling)
    - 0 mark for selected group of users
    - 0 mark if no description of sampling strategy
  - 2) Selection of the nonexposed cohort (*Ni et al 2020*[22])
    - 1 mark if drawn from the same community as the exposed cohort
    - 0 mark if drawn from a different source
    - 0 mark if no description of the derivation of the non-exposed cohort
-

- 
- 3) Ascertainment of exposure (*Ni et al 2020*[22])
    - 1 mark for secure record (e.g., surgical records)
    - 1 mark for structured interview (e.g each interview is presented with exactly the same questions in the same order and/or validated measurement tool)
    - 0 mark for written self report
    - 0 mark if no description
  - 4) Outcome of interest not present at the start of the study
    - 1 mark for yes
    - 0 mark for no
  - 5) Comparability (controlled for age)
    - 1 mark for yes
    - 0 mark for no
  - 6) Comparability (controlled for additional important factors, e.g., sex, education, occupation, income, marital status, baseline health or medical history (mental or physical)/pre-existing illness, or other appropriate confounders given the exposure and outcome)
    - 1 mark for yes
    - 0 mark for no
  - 7) Assessment of outcome (*revised*)
    - 1 mark for independent blind assessment
    - 1 mark for record linkage
    - 1 mark for clinical diagnosis using ICD/DSM or a validated measure with a clinical cutoff indicating any psychiatric diagnosis
    - 0 mark for measures without clinical cutoff or newly conceived measures
    - 0 mark if no description
  - 8) Lengths of follow-up (*Ni et al 2020*[22])
    - 1 mark for yes (follow-up long enough for outcomes to occur e.g., 2 weeks)
    - 0 mark for no
  - 9) Adequacy of follow-up
    - 1 mark for complete follow up - all subjects accounted for
    - 1 mark if subjects lost to follow up unlikely to introduce bias - small number lost (i.e.,  $\geq 70\%$  follow up), or description provided of those lost, or evidence that no significant differences between subjects retained and subjects lost
    - 0 mark if follow up rate  $< 70\%$  and no description of those lost
    - 0 mark for no statement
- 

#### **Case-control studies (*Patra et al 2015*[20])**

- 1) Is the case definition adequate?
    - 1 mark for yes, with independent validation
    - 0 mark for yes, e.g., record linkage or based on self-reports
    - 0 mark if no description
  - 2) Representativeness of the cases
    - 1 mark for consecutive or obviously representative series of cases
    - 0 mark for potential for selection biases or not stated
  - 3) Selection of controls
    - 1 mark for community controls
    - 0 mark for hospital controls
    - 0 mark if no description
  - 4) Definition controls
    - 1 mark for no history of exposure
    - 0 mark if no description of source
  - 5) Comparability (controlled for age)
    - 1 mark for yes
    - 0 mark for no
-

- 
- 6) Comparability (controlled for additional factors, e.g., sex, education, occupation, income, marital status, baseline health or medical history (mental or physical)/pre-existing illness, or other appropriate confounders given the exposure and outcome)
- 1 mark for yes
  - 0 mark for no
- 7) Ascertainment of exposure
- 1 mark for secure record (e.g., surgical records)
  - 1 mark for structured interview where blind to case/control status (e.g each interview is presented with exactly the same questions in the same order and/or validated measurement tool)
  - 0 mark for interview not blinded to case/control status
  - 0 mark for written self-report or medical record only
  - 0 mark if no description
- 8) Same method of ascertainment for cases and controls
- 1 mark for yes
  - 0 mark for no
- 9) Non-response rate
- 1 mark if same rate for both groups
  - 0 mark if non respondents described
  - 0 mark if rate different and no designation
-

**Table S5. Raw data of probability samples included in meta-analysis**

Study	Setting	Disease	Data collection period	Cohort study	Sample size	Prevalence	Meta-analysis
<b>Anxiety</b>							
Qian et al 2020[32]	Wuhan, China	COVID-19	Feb 1–10, 2020	n/a	510	32.8%	+
Qian et al 2020[32]	Shanghai, China	COVID-19	Feb 1–10, 2020	n/a	501	20.5%	+
Zhao et al 2020[34]	Hong Kong	COVID-19	Apr 9–23, 2020	n/a	1 501	15.8% <sup>†</sup>	
Zhao et al 2020[35]	Hong Kong	COVID-19	Apr 9–23, 2020	n/a	1 501	15.8% <sup>†</sup>	+
Choi et al 2020[30]	Hong Kong	COVID-19	Apr 24–May 3, 2020	n/a	500	14.0%	+
Holingue et al 2020[31]	United States	COVID-19	Mar 10–16, 2020	UAS	5 065	14.7%	+
Bruine de Bruin 2020[29]	United States	COVID-19	Mar 10–31, 2020	UAS	6 666	15.5% <sup>*</sup>	
Twenge et al 2020[33]	United States	COVID-19	Apr 23–May 5, 2020	HPS	69 316	30.8%	+
Twenge et al 2020[33]	United States	COVID-19	May 7–12, 2020	HPS	39 447	30.0%	
Twenge et al 2020[33]	United States	COVID-19	May 14–19, 2020	HPS	119 897	28.2%	
Twenge et al 2020[33]	United States	COVID-19	May 21–26, 2020	HPS	90 798	29.4%	
<b>Depression</b>							
Li et al 2020[41]	Hong Kong	COVID-19	Feb 25–Apr 29, 2020	n/a	3 011	21.3%	+
Zhao et al 2020[34]	Hong Kong	COVID-19	Apr 9–23, 2020	n/a	1 501	14.8% <sup>††</sup>	
Zhao et al 2020[35]	Hong Kong	COVID-19	Apr 9–23, 2020	n/a	1 501	14.8% <sup>††</sup>	+
Choi et al 2020[30]	Hong Kong	COVID-19	Apr 24–May 3, 2020	n/a	500	19.8%	+
Garre-Olmo et al 2020[39]	Girona, Spain	COVID-19	Apr 8–May 4, 2020	n/a	692	12.7%	+
Holingue et al 2020[31]	United States	COVID-19	Mar10–16, 2020	UAS	5 065	9.5%	
Bruine de Bruin 2020[29]	United States	COVID-19	Mar 10–31, 2020	UAS	6 666	10.3% <sup>*</sup>	

Daly et al 2020[36]	United States	COVID-19	Mar 10–31, 2020	UAS	6 819	10.5%	+
Ettman et al 2020[37]	United States	COVID-19	Mar 31–Apr 13, 2020	AP	1 441	27.8% <sup>‡</sup>	+
Ettman et al 2020[38]	United States	COVID-19	Mar 31–Apr 13, 2020	AP	1 441	27.8% <sup>‡</sup>	
Daly et al 2020[36]	United States	COVID-19	Apr 1–17, 2020	UAS	5 428	14.2%	
Twenge et al 2020[33]	United States	COVID-19	Apr 23–May 5, 2020	HPS	69 316	23.5%	+
Twenge et al 2020[33]	United States	COVID-19	May 7–12, 2020	HPS	39 447	24.1%	
Twenge et al 2020[33]	United States	COVID-19	May 14–19, 2020	HPS	119 897	24.4%	
Twenge et al 2020[33]	United States	COVID-19	May 21–26, 2020	HPS	90 798	24.9%	
Ko et al 2006[40]	Taiwan	SARS	After epidemic	n/a	1 499	3.7%	
<b><i>PTSD</i></b>							
Lau et al 2005[43]	Hong Kong	SARS	Toward end of epidemic	n/a	818	15.7% <sup>§</sup>	+
Lau et al 2006[44]	Hong Kong	SARS	Toward end of epidemic	n/a	818	15.7% <sup>§</sup>	
Jalloh et al 2018[42]	Sierra Leone	Ebola	Toward end of epidemic	n/a	3 564	16.0%	+
<b><i>Psychological distress</i></b>							
Harris et al 2020[48]	Norway	COVID-19	Mar 20–27, 2020	n/a	4 008	1.0%	+
Daly et al 2020[47]	United Kingdom	COVID-19	Apr 2020	UKHLS	14 985	37.8%	
Chandola et al 2020[46]	United Kingdom	COVID-19	Apr 2020	UKHLS	17 761	37.2%	+
Pierce et al 2020[55]	United Kingdom	COVID-19	Apr 23–30, 2020	UKHLS	17 452	27.3%	
Li et al 2020[50]	United Kingdom	COVID-19	Apr 24–30, 2020	UKHLS	15 530	29.2%	
Niedzwiedz et al 2020[53]	United Kingdom	COVID-19	Apr 24–30, 2020	UKHLS	10 977	30.6%	
Daly et al 2020[47]	United Kingdom	COVID-19	May 2020	UKHLS	15 809	34.7%	
Chandola et al 2020[46]	United Kingdom	COVID-19	May 2020	UKHLS	14 811	34.7%	
Daly et al 2020[47]	United Kingdom	COVID-19	Jun 2020	UKHLS	15 842	31.9%	

Chandola et al 2020[46]	United Kingdom	COVID-19	Jun 2020	UKHLS	14 123	32.1%	
Chandola et al 2020[46]	United Kingdom	COVID-19	Jul 2020	UKHLS	13 754	25.8%	
Robinson et al 2020[57]	United States	COVID-19	Mar 10–18, 2020	UAS	5 549	10.5%	
Bruine de Bruin 2020[29]	United States	COVID-19	Mar 10–31, 2020	UAS	6 666	11.2%*	
Riehm et al 2020[56]	United States	COVID-19	Mar 10–31, 2020	UAS	6 329	11.3%	
Kämpfen et al 2020[49]	United States	COVID-19	Mar 10–31, 2020	UAS	6 585	11.2%	+
Robinson et al 2020[57]	United States	COVID-19	Apr 1–14, 2020	UAS	5 146	16.0%	
McGinty et al 2020[51]	United States	COVID-19	Apr 7–13, 2020	AP	1 468	13.6%	+
McGinty et al 2020[52]	United States	COVID-19	Apr 7–13, 2020	AP	1 337	14.2%	
Robinson et al 2020[57]	United States	COVID-19	May 27–Jun 9, 2020	UAS	5 784	9.8%	
McGinty et al 2020[52]	United States	COVID-19	Jul 7–22, 2020	AP	1 337	13.0%	
Cénat et al 2020[45]	Équateur, Congo	EVD	After epidemic	n/a	1 614	45.6%	
Jalloh et al 2018[42]	Sierra Leone	EVD	Toward end of epidemic	n/a	3 564	6%	
Peng et al 2010[54]	Taiwan	SARS	After epidemic	n/a	1 278	11.7%	
<b><i>Suicidality</i></b>							
Leske, et al 2020[59]	Queensland, Australia	COVID-19	Feb–Aug, 2020	n/a	Whole population	Monthly suicide rate: 14.1/100 000	
Qin et al 2020[60]	Norway	COVID-19	Mar–May, 2020	n/a	Whole population	Three-month suicide rate: 2.8/100 000	
Wasserman 1992[61]	United States	1918 Influenza	During epidemic	n/a	Whole population	Numeric data not available	
<b><i>Alcohol use disorders</i></b>							
Jackson et al 2020[58]	England, United Kingdom	COVID-19	April, 2020	n/a	1,674	38.3%	

EVD= Ebola Virus Disease. HPS=Household Pulse Survey. SARS= Severe acute respiratory syndrome. AP=AmeriSpeak Panel. UAS=Understanding America Study. UKHLS=UK Household Longitudinal Study. \*Data was obtained by contacting the corresponding author. †,‡,\$,¶ Same data reported by the same author.

**Table S6. List of countries with published studies on novel epidemics and mental health**

<b>COVID-19</b>	<p><b>Asia (n=104)</b></p> <p>64 China (2 Entire China, 54 Mainland China, 8 Hong Kong), 8 India, 4 Iran, 4 Japan, 4 Nepal, 4 Saudi Arabia, 3 Israel, 2 Bangladesh, 2 Jordan, 2 South Korea, 1 Kuwait, 1 Malaysia, 1 Oman, 1 Philippines, 1 Singapore, 1 United Arab Emirates, 1 Vietnam</p> <p><b>Europe (n=84)</b></p> <p>20 United Kingdom, 14 Italy, 12 Spain, 11 Germany, 4 Greece, 4 Turkey, 3 Austria, 3 Norway, 2 Ireland, 2 Poland, 2 Portugal, 1 Bosnia and Herzegovina, 1 Cyprus, 1 Czech, 1 Denmark, 1 France, 1 Georgia, 1 Sweden</p> <p><b>North America (n=30)</b></p> <p>23 United States, 1 United States and Canada, 4 Canada, 2 Mexico</p> <p><b>Oceania (n=9)</b></p> <p>6 Australia, 3 New Zealand</p> <p><b>South America (n=7)</b></p> <p>4 Brazil, 2 Argentina, 1 Colombia,</p> <p><b>Africa (n=5)</b></p> <p>2 Egypt, 1 Morocco, 1 South Africa, 1 Tunisia</p> <p><b>International (n=11)</b></p>
<b>Ebola</b>	<p><b>Africa (n=2)</b></p> <p>1 Congo, 1 Sierra Leone</p>
<b>SARS</b>	<p><b>Asia (n=5)</b></p> <p>4 China (2 Hong Kong, 2 Taiwan), 1 Singapore</p>
<b>1918 Influenza</b>	<p><b>North America (n=1)</b></p> <p>1 United States</p>

Note: The number of studies may exceed 255 as some studies reported on more than one country.



**Table S7. Prevalence of mental health outcomes during and after novel epidemics in probability samples or whole populations**

Study	Setting	Disease	Phase of epidemic	Study design	Survey method	Participation rate	Age, years	Sample size	Measure	Prevalence (95% CI)
<b>Anxiety</b>										
Twenge et al 2020[33]	United States	COVID-19	Before and During	Longitudinal	In-person; Online	NR	≥18	Before: 17 067; During: 39 447-119 897	GAD-2≥3	Before: 8.2%; During: T1: 30.8%, T2: 30.0%, T3: 28.2%, T4: 29.4% <sup>†</sup>
Zhao et al 2020[35]	Hong Kong	COVID-19	Before and During	Serial cross-sectional	Online; Telephone	Before: 70.2-74.4%; During: 61.3%	≥18	Before: 4 036-4 051; During: 1 501	GAD-2≥3	Before: T1: 11.3%, T2: 9.3%; During: 15.8% <sup>a</sup>
Qian et al 2020[32]	Wuhan and Shanghai, China	COVID-19	During	Cross-sectional	Telephone	13.8%	≥18	Wuhan: 510, Shanghai: 501	GAD-7≥10	Wuhan: 32.8%; Shanghai: 20.5%
Choi et al 2020[30]	Hong Kong	COVID-19	During	Cross-sectional	Online	64.6%	≥18	500	GAD-7≥10	14.0%
Holingue et al 2020[31]	United States	COVID-19	During	Cross-sectional	Online	63%	≥18	5,065	GAD-2≥3	14.7% <sup>‡</sup>
Bruine de Bruin 2020[29]	United States	COVID-19	During	Cross-sectional	Online	79%	18-100	6,666	GAD-2≥3	15.5% <sup>b, ‡</sup>
<b>Depression</b>										
Twenge et al 2020[33]	United States	COVID-19	Before and During	Longitudinal	In-person; Online	NR	≥18	Before: 17 067; During: 39 447-119 897	PHQ-2≥3	Before: 6.6%; During: T1: 23.5%, T2: 24.1%, T3: 24.4%, T4: 24.9% <sup>†</sup>
Daly et al 2020[36]	United States	COVID-19	Before and During	Longitudinal	Before: In-person; During: Online	Before: NR; During: 63.9-80.2%	≥18	5 428-6 819	PHQ-2≥3	Before: 8.9% (7.8-10.1); During: T1: 10.5%, T2: 14.2% <sup>‡</sup>
Zhao et al 2020[35]	Hong Kong	COVID-19	Before and During	Serial Cross-sectional	Online; Telephone	Before: 70.2-74.4%; During: 61.3%	≥18	Before: 4 036-4 051; During: 1 501	PHQ-2≥3	Before: T1: 7.2%, T2: 6.3%; During: 14.8%
Ettman et al 2020[37]	United States	COVID-19	Before and During	Serial Cross-sectional	Online	64.3%	≥18	Before: 5 065; During: 1 441	PHQ-9≥10	Before: 8.5%; During: 27.8% <sup>a, *</sup>
Choi et al 2020[30]	Hong Kong	COVID-19	During	Cross-sectional	Online	64.6%	≥18	500	PHQ-9≥10	19.8%
Li et al 2020[41]	Hong Kong	COVID-19	During	Cross-sectional	Telephone	71.4%	≥15	3 011	PHQ-9≥10	21.3% (19.9-22.8)
Garre-Olmo et al 2020[39]	Girona, Spain	COVID-19	During	Cross-sectional	Online	90.4%	≥18	692	PHQ-9≥10	12.7% (10.3-15.4)
Holingue et al 2020[31]	United States	COVID-19	During	Cross-sectional	Online	63.0%	≥18	5 065	PHQ-2≥3	9.5% <sup>‡</sup>

<b>Bruine de Bruin 2020[29]</b>	United States	COVID-19	During	Cross-sectional	Online	79%	18-100	6 666	PHQ-2≥3	10.3% <sup>b, †</sup>
<b>Ko et al 2006[40]</b>	Taiwan	SARS	After	Cross-sectional	Telephone	NR	≥15	1 499	TDQ≥18	3.7%
<b>Post-traumatic stress disorder</b>										
<b>Jalloh et al 2018[42]</b>	Sierra Leone	EVD	During	Cross-sectional	In-person	97.9%	Median: 35	3 564	IES-R≥33	16% (14.7-17.1)
<b>Lau et al 2005[43]</b>	Hong Kong	SARS	During	Serial cross-sectional	Telephone	57.7%	18-60	818	IES≥28	15.7% <sup>a</sup>
<b>Psychological distress</b>										
<b>Chandola et al 2020[46]</b>	United Kingdom	COVID-19	During	Longitudinal	Online	39.2-49%	NR	13 754-17 761	GHQ-12≥3	T1: 37.2%, T2: 34.7%, T3: 32.1%, T4: 25.8% <sup>§</sup>
<b>Daly et al 2020[47]</b>	United Kingdom	COVID-19	Before and During	Longitudinal	Before: In-person/online; During: Online	Before: 67.9%; During: 46.0-48.6%	18-96	14 393	GHQ-12≥3	Before: 24.3%; During: T1: 37.8%, T2: 34.7%, T3: 31.9% <sup>§</sup>
<b>Niedzwiedz et al 2020[53]</b>	United Kingdom	COVID-19	Before and During	Longitudinal	Online	Before: ≥80%; During: 48.6%	≥18	Before: 22 823; During: 9 748	GHQ-12≥4	Before: 19.4% (18.7-20.1); During: 30.6% (29.1-32.3) <sup>§</sup>
<b>Pierce et al 2020[55]</b>	United Kingdom	COVID-19	Before and During	Longitudinal	Before: In-person; During: Online	Before: NR; During: 41.2%	≥16	Before: 12 312; During: 17 452	GHQ-12≥4	Before: 18.9% (17.8-20.0); During: 27.3% (26.3-28.2) <sup>§</sup>
<b>McGinty et al 2020[52]</b>	United States	COVID-19	During	Longitudinal	Online	T1: NR, T2: 91.2%	≥18	1 337	K6≥13	T1: 14.2% (11.3-17.7), T2: 13.0% (10.1-16.5) <sup>†</sup>
<b>Robinson et al 2020[57]</b>	United States	COVID-19	During	Longitudinal	Online	NR	≥18	5 146-5 784	PHQ-4≥6	T1: 10.5%, T2: 16.0%, T6: 9.8% <sup>‡</sup>
<b>McGinty et al 2020[51]</b>	United States	COVID-19	Before and During	Serial cross-sectional	Online	Before: 64.2%, During: 70.4%	≥18	Before: 25 417; During: 1 468	K6≥13	Before: 3.9% (3.6-4.2), During: 13.6% (11.1-16.5) <sup>*</sup>
<b>Harris et al 2020[48]</b>	Norway	COVID-19	During	Cross-sectional	Online	NR	≥18	4 008	HSCL-10≥1.85	<1%
<b>Li et al 2020[50]</b>	United Kingdom	COVID-19	During	Cross-sectional	Online	41.2%	≥18	15 530	GHQ-12≥4	29.2%
<b>Kämpfen et al 2020[49]</b>	United States	COVID-19	During	Cross-sectional	Online	78.1%	≥18	6 585	PHQ-4≥6	11.2% <sup>‡</sup>
<b>Bruine de Bruin 2020[29]</b>	United States	COVID-19	During	Cross-sectional	Online	79%	18-100	6 666	PHQ-4≥6	11.2% <sup>b, †</sup>
<b>Riehm et al 2020[56]</b>	United States	COVID-19	During	Cross-sectional	In-person	81.6%	≥18	6 329	PHQ-4≥6	11.3% <sup>‡</sup>

<b>Cénat et al 2020[45]</b>	Équateur, Congo	EVD	After	Cross-sectional	In-person	98.6%	18-85	1 614	K10≥22	45.6% (42.0-49.2)
<b>Jalloh et al 2018[42]</b>	Sierra Leone	EVD	During	Cross-sectional	In-person	97.9%	≥15	3 564	PHQ-4≥6	6% (5.4-7.0)
<b>Peng et al 2010[54]</b>	Taiwan	SARS	After	Cross-sectional	Telephone	68.3%	18-89	1 278	BSRS-5≥6	11.7%
<b>Suicidality</b>										
<b>Leske, et al 2020[59]</b>	Queensland, Australia	COVID-19	Before and During	Time series	Secondary data analysis	NA	NA	NA	Monthly suicide rates	Before: 14.9/100 000; During: 14.1/100 000
<b>Qin et al 2020[60]</b>	Norway	COVID-19	Before and During	Time series	Secondary data analysis	NA	NA	NA	3-month suicide rates	Year 2014-2018: 2.9-4.1/100 000; Year 2020: 2.8/100 000
<b>Wasserman 1992[61]</b>	United States	1918 Influenza	Before, During and After	Time series	Secondary data analysis	NA	NA	NA	Monthly suicide rates	Increased with mortality due to outbreak.
<b>Alcohol use disorders</b>										
<b>Jackson et al 2020[58]</b>	England, United Kingdom	COVID-19	Before and During	Serial cross-sectional	Before lockdown: In-person; During lockdown: Telephone	NR	≥16	Before lockdown: 18 884; During lockdown: 1 674	AUDIT-C≥5	Before lockdown: 25.1%; During lockdown: 38.3%

COVID-19=Coronavirus Disease 2019. EVD=Ebola Virus Disease. SARS=Severe acute respiratory syndrome. NA=not applicable. NR=not reported. Measures: AUDIT-C=Alcohol Use Disorders Identification Test-Concise. BRSR-5=5-item Brief Symptom Rating Scale. GAD-2=Generalized Anxiety Disorder-2 Scale. GAD-7=Generalized Anxiety Disorder-7 Scale. GHQ-12=General Health Questionnaire-12. HSCL-10=10-item Hopkins Symptom Checklist. IES=Impact of Event Scale. IES-R=Impact of Event Scale-Revised. K6=Kessler Psychological Distress Scale-6. K10=Kessler Psychological Distress Scale-10. PHQ-2=Patient Health Questionnaire-2. PHQ-4=Patient Health Questionnaire-4. PHQ-9=Patient Health Questionnaire-9. TDQ=Taiwanese Depression Questionnaire. <sup>a</sup>Same data was reported by the same author in another study, which is omitted from the table. <sup>b</sup>Numerical data was obtained by contacting the corresponding author. <sup>c</sup>NORC's AmeriSpeak panel. <sup>d</sup>Household Pulse Survey. <sup>e</sup>Understanding America Study. <sup>f</sup>UK Household Longitudinal Study.

**Table S8. Prevalence of mental health outcomes during and after novel epidemics in non-probability samples of general population**

Study	Setting	Disease	Study design	Survey method	Age range, years	Sample size	Measure	Cut-off (Binary)	Prevalence (95% CI)
<b>Anxiety</b>									
Dawel et al 2020[230]	Australia	COVID-19	Longitudinal	Online	≥18	1 295	GAD-7	≥10	20.3%
Bendau et al 2020[231]	Germany	COVID-19	Longitudinal	Online	18-82	1 822	GAD-2	≥3	T1: 36.4%, T2: 29.2%, T3: 24.5%, T4: 24.9%
Gopal et al 2020[232]	India	COVID-19	Longitudinal	Online	≥18	159	GAD-7	≥10	T1: 29.2%, T4: 38.7%
O'Connor et al 2020[96]	United Kingdom	COVID-19	Longitudinal	Online	≥18	3 077	GAD-7	≥10	T1: 21.0%, T2: 18.6%, T3: 16.8%
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.		Before: 3.1% (2.52-3.72); During: 5.2% (4.31-5.95)
Abba-Aji et al 2020[233]	Alberta, Canada	COVID-19	Cross-sectional	Online	11-88	6 041	GAD-7	≥10	46.7%
Badellino et al 2020[147]	Argentina	COVID-19	Cross-sectional	Online	≥18	1 985	GAD-7	≥10	15.1%
Fisher et al 2020[165]	Australia	COVID-19	Cross-sectional	Online	≥18	13 829	GAD-7	≥10	21.0%
Hammarberg et al 2020[152]	Australia	COVID-19	Cross-sectional	Online	≥18	13 829	GAD-7	≥10	20.0%
Pieh et al 2020[234]	Austria	COVID-19	Cross-sectional	Online	≥18	1 005	GAD-7	≥10	19.0%
Pieh et al 2020[235]	Austria	COVID-19	Cross-sectional	Online	≥18	1 005	GAD-7	≥10	19.0%
Hossain et al 2020[163]	Bangladesh	COVID-19	Cross-sectional	Online	≥18	880	GAD-7	≥10	49.1%
Islam et al 2020[153]	Bangladesh	COVID-19	Cross-sectional	Online	13-63	1 311	GAD-7	≥10	37.3%
Martinez et al 2020[154]	Brazil	COVID-19	Cross-sectional	Online	≥18	1 613	HADS	≥8	82.6%
Elton-Marshall et al 2020[63]	Canada	COVID-19	Cross-sectional	Online	≥18	1 005	GAD-7	≥10	25.5%
Nwachukwu et al 2020[236]	Canada	COVID-19	Cross-sectional	Online	≥18	8 267	GAD-7	≥10	47.2%
Ahmed et al 2020[237]	China	COVID-19	Cross-sectional	Online	14-68	1 074	BAI	≥16	18.9%
Zhao et al 2020[161]	China	COVID-19	Cross-sectional	Online	≥13	2 003	BAI	≥19	9.4%
Hou et al 2020[238]	China	COVID-19	Cross-sectional	Online	≥18	3 088	GAD-2	≥3	13.3%
Ni et al 2020[66]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 577	GAD-2	≥3	23.8% (21.8-26.0)
Zhang et al 2020[239]	China	COVID-19	Cross-sectional	Online	≥18	1 255	GAD-2	≥3	8.5%
Ni et al 2020[164]	China	COVID-19	Cross sectional	Online	≥18	2 551	GAD-7	≥10	40.3%
Li et al 2020[240]	China	COVID-19	Cross-sectional	Online	NR	3 001	GAD-7	≥10	2.9%
Huang et al 2020[168]	China	COVID-19	Cross-sectional	Online	Mean: 35.3	7 236	GAD-7	≥9	35.1%
Gao et al 2020[64]	China	COVID-19	Cross-sectional	Online	Mean: 32.3	4 872	GAD-7	≥10	22.6% (21.4-23.8)
Lin et al 2020[241]	China	COVID-19	Cross sectional	Online	NR	5 641	GAD-7	≥10	18.5%
Zhang et al 2020[242]	China	COVID-19	Cross-sectional	Online	Mean: 29.6	98	GAD-7	≥10	23.4%
Ren et al 2020[243]	China	COVID-19	Cross-sectional	Online	NR	1 172	GAD-7	NR	13.3%

Liang et al 2020[244]	China	COVID-19	Cross-sectional	Online	NR	Hubei: 30; Others: 1 074	GAD-7	≥10	Hubei: 16.7%; Others: 9.2%
Ren et al 2020[171]	China	COVID-19	Cross sectional	Online	≥16	6 130	GAD-7	≥10	7.1%
Shi et al 2020[94]	China	COVID-19	Cross-sectional	Online	≥18	56 932	GAD-7	≥10	10.4%
Su et al 2020[245]	China	COVID-19	Cross-sectional	Online	≥18	403	GAD-7	≥10	14.7%
Wang et al 2020[79]	China	COVID-19	Cross sectional	Online; Telephone	≥11	19 372	GAD-7	≥10	12.2% (11.8-12.7)
Zhong et al 2020[166]	China	COVID-19	Cross-sectional	Online	16-87	7 741	GAD-7	≥6	23.6%
Zhang et al 2020[80]	Shandong, China	COVID-19	Cross sectional	Online	≥11	3 237	GAD-7	≥10	20.8%
Fu et al 2020[150]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 242	GAD-7	≥10	27.5%
Lu et al 2020[167]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 035	GAD-7	≥10	21.2%
Wu et al 2020[246]	China	COVID-19	Cross-sectional	Online	NR	24 789	HADS	≥11	17.8%
Guo et al 2020[91]	China	COVID-19	Cross-sectional	Online	≥18	2 331	HADS	≥8	25.4%
Huang et al 2020[74]	China	COVID-19	Cross-sectional	Online	≥18	6 261	SAS	≥50	13.5%
Liu et al 2020[247]	China	COVID-19	Cross-sectional	Online	≥18	4 911	SAS	≥50	20.6%
Lei et al 2020[248]	Southwest, China	COVID-19	Cross-sectional	Online	Mean: 32.3	1 593	SAS	≥50	8.3%
Wang et al 2020[144]	China	COVID-19	Cross-sectional	Online	18-72	600	SAS	≥50	6.3%
Zhao et al 2020[249]	China	COVID-19	Cross sectional	Online	NR	515	SAS	≥50	14.4%
Zhu et al 2020[250]	China	COVID-19	Cross sectional	Online	11-75	992	SAS	≥50	9.6%
Elhai et al 2020[251]	Tianjin, China	COVID-19	Cross sectional	Online	17-64	908	GAD-7	≥9	7.9%
Lau et al 2020[252]	Hong Kong	COVID-19	Cross-sectional	Online	18-79	761	GAD-2	≥2	26.9%
Solomou et al 2020[253]	Cyprus	COVID-19	Cross-sectional	Online	≥18	1 642	GAD-7	≥10	23.1%
Makhashvili et al 2020[72]	Georgia	COVID-19	Cross-sectional	Online	≥18	2 088	GAD-7	≥10	23.5%
Benke et al 2020[67]	Germany	COVID-19	Cross-sectional	Online	Mean: 40.5	4 335	PROMIS-ED-SF	≥20	30.8%
Bauerle et al 2020[254]	Germany	COVID-19	Cross sectional	Online	≥18	15 037	GAD-2	≥3	19.7%
Petzold et al 2020[255]	Germany	COVID-19	Cross-sectional	Online	18-99	6 509	GAD-2	≥3	25%
Bäuerle et al 2020[256]	Germany	COVID-19	Cross-sectional	Online	≥18	15 037	GAD-7	≥10	16.8%
Benke et al 2020[257]	Germany	COVID-19	Cross-sectional	Online	18-95	4 335	GAD-7	≥10	21.2%
Hetkamp et al 2020[258]	Germany	COVID-19	Cross-sectional	Online	≥18	16 245	GAD-7	≥10	7.2%
Teufel et al 2020[259]	Germany	COVID-19	Cross-sectional	Online	NR	12 244	GAD-7	NR	10%
Skoda et al 2020[260]	Germany	COVID-19	Cross-sectional	Online	NR	10 629	GAD-7	≥10	16.0%
Skapinakis et al 2020[76]	Greece	COVID-19	Cross-sectional	Online	≥18	3 379	GAD-2	≥3	27.7%
Parlapani et al 2020[261]	Greece	COVID-19	Cross-sectional	Online	≥18	3 029	GAD-7	≥11	35.6%
Papandreou et al 2020[262]	Greece	COVID-19	Cross-sectional	Online	≥18	839	GAD-7	≥10	13.2%
Parimala et al 2020[263]	India	COVID-19	Cross-sectional	Online	16-81	956	GAD-7	NR	7.11%
Gupta et al 2020[264]	India	COVID-19	Cross-sectional	Online	≥18	958	GAD-2	≥3	11.7%
Grover et al 2020[265]	India	COVID-19	Cross-sectional	Online	≥18	1 685	GAD-7	≥10	38.2%

Shukla et al 2020[266]	India	COVID-19	Cross-sectional	Online	14-87	1 685	GAD-7	≥10	23.7%
Mirhosseini et al 2020[267]	Shahroud, Iran	COVID-19	Cross-sectional	Online	Mean: 35.3	3 565	GAD-7	≥10	18.5%
Hyland et al 2020[181]	Ireland	COVID-19	Cross-sectional	Online	18-88	1 041	GAD-7	≥10	20.0%
Palgi et al 2020[71]	Israel	COVID-19	Cross-sectional	Online	≥18	1 059	GAD-7	≥10	19.0%
Gualano et al 2020[151]	Italy	COVID-19	Cross-sectional	Online	≥18	1 515	GAD-2	≥3	23.2%
Casagrande et al 2020[149]	Italy	COVID-19	Cross-sectional	Online	18-89	2 291	GAD-7	≥10	32.1%
Landi et al 2020[268]	Italy	COVID-19	Cross-sectional	Online	≥18	944	GAD-7	≥10	18.1%
Pakenham et al 2020[269]	Italy	COVID-19	Cross-sectional	Online	≥18	1 035	GAD-7	≥10	15.3%
Mollaioli et al 2020[155]	Italy	COVID-19	Cross-sectional	Online	≥18	6 821	GAD-7	≥10	23.8%
Ueda et al 2020[160]	Japan	COVID-19	Cross-sectional	Online	≥18	2 000	GAD-7	≥10	10.9%
Massad et al 2020[270]	Jordan	COVID-19	Cross-sectional	Online	≥18	5 274	BAI	≥16	16.9%
Naser et al 2020[145]	Jordan	COVID-19	Cross-sectional	Online	≥18	1 798	GAD-7	≥10	22.8%
Burhamah et al 2020[148]	Kuwait	COVID-19	Cross-sectional	Online	≥18	4 132	GAD-7	≥8	25.3%
Janati Idrissi et al 2020[158]	Morocco	COVID-19	Cross-sectional	Online	Mean: 35	827	HAM-A	≥18	29.5%
Gupta et al 2020[271]	Nepal	COVID-19	Cross-sectional	Online	NR	62	GAD-7	≥10	19.4%
Every-Palmer et al 2020[183]	New Zealand	COVID-19	Cross-sectional	Online	18-90	2 010	GAD-7	≥10	15.6%
Havnen et al 2020[272]	Norway	COVID-19	Cross-sectional	Online	≥18	617	GAD-7	≥10	12.0%
Al Sinawi et al 2020[180]	Oman	COVID-19	Cross-sectional	Online	≥18	1 538	GAD-7	≥10	22.0%
Alhalafi et al 2020[273]	Riyadh, Saudi Arabia	COVID-19	Cross-sectional	Online	≥18	651	GAD-7	≥10	25.5%
Shatla et al 2020[159]	Saudi Arabia	COVID-19	Cross-sectional	Online	NR	1 921	HADS	NR	26.4%
Lee et al 2020[274]	Seoul, South Korea	COVID-19	Cross-sectional	Online	≥20	1 049	GAD-2	≥3	18.6%
Ozdemir et al 2020[275]	Singapore	COVID-19	Cross-sectional	Online	≥21	897	GAD-7	≥10	23.8%
González-Sanguino et al 2020[276]	Spain	COVID-19	Cross-sectional	Online	18-80	3 480	GAD-2	≥3	21.6%
Fullana et al 2020[277]	Spain	COVID-19	Cross-sectional	Online	≥18	5 545	GAD-7	≥10	15.0%
Jacques-Avino et al 2020[69]	Spain	COVID-19	Cross-sectional	Online	≥18	7 053	GAD-7	≥10	27.3%
Papandreou et al 2020[262]	Spain	COVID-19	Cross-sectional	Online	≥18	1 002	GAD-7	≥10	12.3%
McCracken et al 2020[278]	Sweden	COVID-19	Cross-sectional	Online	≥18	1 212	GAD-7	≥10	24.2%
Ozdemir et al 2020[279]	Turkey	COVID-19	Cross-sectional	Online	20-75	2 301	BAI	≥19	24.7%
Özdin et al 2020[280]	Turkey	COVID-19	Cross-sectional	Online	≥18	343	HADS	≥7	45.1%
Thomas et al 2020[157]	United Arab Emirates	COVID-19	Cross-sectional	Online	≥18	1 039	GAD-7	≥10	55.7%
Shevlin et al 2020[281]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	2 025	GAD-7	≥10	21.6%
Dawson et al 2020[282]	United Kingdom	COVID-19	Cross-sectional	Online	18-76	555	GAD-7	≥10	27.0%

Iob et al 2020[283]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	44 775	GAD-7	≥10	20.8%
Jia et al 2020[70]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	3 097	GAD-7	≥10	26.0%
Groarke et al 2020[284]	United Kingdom	COVID-19	Cross-sectional	Online	18-87	1 964	GAD-7	≥10	30.3%
Pieh et al 2020[285]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	1 006	GAD-7	≥10	39.0%
Rettie et al 2020[286]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	842	GAD-7	≥10	24.3%
Shevlin et al 2020[89]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	2 025	GAD-7	≥10	21.6 % (19.8–23.4)
Iob et al 2020[78]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	51 417	PHQ-9	≥10	40.0%
Meyer et al 2020[287]	United States	COVID-19	Cross-sectional	Online	≥18	3 052	BAI	≥22	7.1%
Lee et al 2020[274]	United States	COVID-19	Cross-sectional	Online	18-65	256	GAD-2	≥3	57.4%
Czeisler et al 2020[115]	United States	COVID-19	Cross-sectional	Online	≥18	5 470	GAD-2	≥3	25.5%
Lee et al 2020[288]	United States	COVID-19	Cross-sectional	Online	≥18	453	GAD-2	≥3	47.0%
Fitzpatrick et al 2020[289]	United States	COVID-19	Cross-sectional	Online	≥18	10 368	GAD-7	≥10	>25%
Sherman et al 2020[162]	United States	COVID-19	Cross-sectional	Online	≥18	591	GAD-7	≥10	16.6%
Passos et al 2020[290]	Brazil and Portugal	COVID-19	Cross-sectional	Online	≥18	550	GAD-7	≥10	28.1%
Taylor et al 2020[291]	United States and Canada	COVID-19	Cross-sectional	Online	18-94	6 854	GAD-2	≥3	28%
Nelson et al 2020[292]	International	COVID-19	Cross-sectional	Online	≥18	2 062	GAD-2	≥3	60.7%
Pouso et al 2020[68]	International	COVID-19	Cross-sectional	Online	≥18	5 218	GAD-2	≥3	23.9%
Alzueta et al 2020[293]	International	COVID-19	Cross-sectional	Online	18-94	6 882	GAD-7	≥10	19.5%
Barzilay et al 2020[73]	International	COVID-19	Cross-sectional	Online	18-79	1 350	GAD-7	≥10	22.0%
Généreux et al 2020[294]	International	COVID-19	Cross-sectional	Online	≥18	8 806	GAD-7	≥10	21.0%
Prout et al 2020[295]	International	COVID-19	Cross-sectional	Online	≥18	2 236	GAD-7	≥8	4.6%
Lee et al 2020[296]	International	COVID-19	Cross-sectional	Online	18-65	1 237	GAD-7	≥10	36.0%
Ng et al 2020[297]	Hong Kong	COVID-19	Case control	Telephone	Mean: 57.8	45	HADS	≥11	6.7%
Salari et al 2020[298]	Iran	COVID-19	Case-control	Online	NR	900	BAI	≥24	22.2%
<b>Depression</b>									
Dawel et al 2020[230]	Australia	COVID-19	Longitudinal	Online	≥18	1 295	PHQ-9	≥10	16.4%
Bendau et al 2020[231]	Germany	COVID-19	Longitudinal	Online	18-82	1 822	PHQ-2	≥3	T1: 32.7%, T2: 30.5%, T3: 25.2%, T4: 25.3%
Gopal et al 2020[232]	India	COVID-19	Longitudinal	Online	≥18	159	PHQ-2	≥3	T2: 14.8%, T4: 26.1%,
O'Connor et al 2020[96]	United Kingdom	COVID-19	Longitudinal	Online	≥18	3 077	PHQ-9	≥10	T1: 26.1%, T2: 24.3%, T3: 23.7%
Schmitz et al 2020[299]	Quebec, Canada	COVID-19	Serial cross-sectional	Online	≥18	Before: 52 996; During: 1 607	PHQ-8	≥10	Before: 6.8%; During: 19.2%
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online	≥18	6 327	M.I.N.I.	NR	Before: 4.0% (3.3-4.6); During: 11.8% (10.6-13.0)
Sønderskov et al 2020[300]	Denmark	COVID-19	Serial cross-sectional	Online	Mean: 49.1	2 458	WHO-5	≤49	25.4%
Badellino et al 2020[147]	Argentina	COVID-19	Cross-sectional	Online	≥18	1 985	PHQ-9	≥9	24.4%

Fisher et al 2020[165]	Australia	COVID-19	Cross-sectional	Online	≥18	13 829	PHQ-9	≥10	27.6%
Hammarberg et al 2020[152]	Australia	COVID-19	Cross-sectional	Online	≥18	13 829	PHQ-9	≥10	24.8%
Pieh et al 2020[234]	Austria	COVID-19	Cross-sectional	Online	≥18	1 005	PHQ-9	≥10	21.0%
Pieh et al 2020[235]	Austria	COVID-19	Cross-sectional	Online	≥18	1 005	PHQ-9	≥10	21.0%
Sljivo et al 2020[169]	Bosnia and Herzegovina	COVID-19	Cross-sectional	Online	≥18	1 213	PHQ-9	≥10	28.4%
Martinez et al 2020[154]	Brazil	COVID-19	Cross-sectional	Online	≥18	1 613	HADS	≥8	48.8%
Passos et al 2020[290]	Brazil	COVID-19	Cross-sectional	Online	≥18	289	PHQ-2	≥3	26.6%
Nwachukwu et al 2020[236]	Canada	COVID-19	Cross-sectional	Online	≥18	8 267	PHQ-9	≥10	44.1%
Abba-Aji et al 2020[233]	Alberta, Canada	COVID-19	Cross-sectional	Online	11-88	6 041	PHQ-9	≥10	41.4%
Ahmed et al 2020[237]	China	COVID-19	Cross-sectional	Online	14-68	1 074	BDI	≥14	37.1%
Tang et al 2020[170]	China	COVID-19	Cross-sectional	Online	≥18	941	CES-D	≥15	19.8%
Huang et al 2020[168]	China	COVID-19	Cross-sectional	Online	Mean: 35.3	7 236	CES-D	≥28	20.1%
Wu et al 2020[246]	China	COVID-19	Cross-sectional	Online	NR	24 789	HADS	≥11	14.2%
Hou et al 2020[238]	China	COVID-19	Cross-sectional	Online	≥18	3 088	PHQ-2	≥3	14.1%
Ni et al 2020[66]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 577	PHQ-2	≥3	19.2% (17.3-21.2)
Zhang et al 2020[239]	China	COVID-19	Cross-sectional	Online	≥18	1 255	PHQ-2	≥3	9.5%
Lin et al 2020[241]	China	COVID-19	Cross-sectional	Online	NR	5 641	PHQ-9	≥10	24.5%
Zhang et al 2020[242]	China	COVID-19	Cross-sectional	Online	Mean: 29.6	98	PHQ-9	≥10	34.7%
Ren et al 2020[243]	China	COVID-19	Cross-sectional	Online	NR	1 172	PHQ-9	NR	18.8%
Huang et al 2020[74]	China	COVID-19	Cross-sectional	Online	≥18	6 261	PHQ-9	≥10	17.2%
Li et al 2020[240]	China	COVID-19	Cross-sectional	Online	NR	3 001	PHQ-9	≥10	3.0%
Liang et al 2020[244]	China	COVID-19	Cross-sectional	Online	NR	Hubei: 30; Others: 1 074	PHQ-9	≥10	Hubei: 23.3%; Others: 18.3%
Ren et al 2020[171]	China	COVID-19	Cross-sectional	Online	≥16	6 130	PHQ-9	≥10	12%
Shi et al 2020[94]	China	COVID-19	Cross-sectional	Online	≥18	56 932	PHQ-9	≥10	10.8%
Wang et al 2020[79]	China	COVID-19	Cross-sectional	Online; Telephone	≥11	19 372	PHQ-9	≥10	11.0% (10.6-11.5)
Zhang et al 2020[174]	China	COVID-19	Cross-sectional	Online	≥18	1 342	PHQ-9	≥10	13.6%
Zhong et al 2020[166]	China	COVID-19	Cross-sectional	Online	16-87	7 741	PHQ-9	≥7	21.5%
Liu et al 2020[301]	Guangdong, China	COVID-19	Cross-sectional	Online	NR	727	PHQ-9	≥10	11.4%
Zhang et al 2020[80]	Shandong, China	COVID-19	Cross-sectional	Online	≥11	3 237	PHQ-9	≥10	19.5%
Peng et al 2020[302]	Shenzhen, China	COVID-19	Cross-sectional	In-person	18-70	2 237	SDS	≥50	6.2%
Jiang et al 2020[303]	China	COVID-19	Cross-sectional	Online	≥18	60 199	SDS	≥48	64.3%
Liu et al 2020[304]	China	COVID-19	Cross-sectional	Online	NR	608	SDS	≥50	27.1%
Wang et al 2020[144]	China	COVID-19	Cross-sectional	Online	18-72	600	SDS	≥53	17.2%
Zhao et al 2020[249]	China	COVID-19	Cross-sectional	Online	NR	515	SDS	≥53	29.7%



Lei et al 2020[248]	Southwest, China	COVID-19	Cross-sectional	Online	Mean: 32.3	1 593	SDS	≥40	14.6%
Gao et al 2020[64]	China	COVID-19	Cross-sectional	Online	Mean: 32.3	4 872	WHO-5	≤12	48.3% (46.9-49.7)
Chen et al 2020[305]	Wuhan and surrounding areas, China	COVID-19	Cross-sectional	Online	NR	1 071	SDS	≥53	2.9%
Fu et al 2020[150]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 242	PHQ-9	≥10	29.3%
Lu et al 2020[167]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 035	PHQ-9	≥10	16.7%
Lau et al 2020[252]	Hong Kong	COVID-19	Cross-sectional	Online	18-79	761	PHQ-2	≥3	18.3%
Bressington et al 2020[75]	Hong Kong	COVID-19	Cross-sectional	Online	18-59	11 072	PHQ-9	≥10	46.5%
Caballero-Dominguez et al 2020[97]	Colombia	COVID-19	Cross-sectional	Online	18-76	700	WHO-5	≤9	61.1%
Peretti-Watel et al 2020[65]	France	COVID-19	Cross-sectional	Online	≥18	2 003	PHQ-9	≥15	8.8% (7.6-10.0)
Makhashvili et al 2020[72]	Georgia	COVID-19	Cross-sectional	Online	≥18	2 088	PHQ-9	≥10	29.6%
Munk et al 2020[95]	Germany	COVID-19	Cross-sectional	Online	≥18	949	BDI-II	≥13	35.5%
Bäuerle et al 2020[254]	Germany	COVID-19	Cross-sectional	Online	≥18	15 037	PHQ-2	≥3	14.3%
Bäuerle et al 2020[256]	Germany	COVID-19	Cross-sectional	Online	≥18	15 037	PHQ-2	≥3	14.3%
Tuefel et al 2020[259]	Germany	COVID-19	Cross-sectional	Online	NR	12 244	PHQ-2	NR	11.9%
Petzold et al 2020[255]	Germany	COVID-19	Cross-sectional	Online	18-99	6 509	PHQ-2	≥3	25%
Benke et al 2020[257]	Germany	COVID-19	Cross-sectional	Online	18-95	4 335	PHQ-9	≥10	31.1%
Benke et al 2020[67]	Germany	COVID-19	Cross-sectional	Online	Mean: 40.5	4 335	PHQ-9	≥10	31.0%
Parlapani et al 2020[261]	Greece	COVID-19	Cross-sectional	Online	≥18	3 029	PHQ-9	≥10	22.7%
Skapinakis et al 2020[76]	Greece	COVID-19	Cross-sectional	Online	≥18	3 379	PHQ-9	≥10	27.7%
Voitsidis et al 2020[306]	Greece	COVID-19	Cross-sectional	Online	≥18	2 827	PHQ-9	≥10	23.2%
Papandreou et al 2020[262]	Greece	COVID-19	Cross-sectional	Online	≥18	839	PHQ-9	≥10	18.8%
Gupta et al 2020[264]	India	COVID-19	Cross-sectional	Online	≥18	958	PHQ-2	≥3	11.1%
Grover et al 2020[265]	India	COVID-19	Cross-sectional	Online	≥18	1 685	PHQ-9	≥10	10.5%
Shukla et al 2020[266]	India	COVID-19	Cross-sectional	Online	14-87	1 685	PHQ-9	≥10	8.8%
Singh et al 2020[307]	India	COVID-19	Cross-sectional	Online	≥18	234	PHQ-9	≥10	14.1%
Hyland et al 2020[181]	Ireland	COVID-19	Cross-sectional	Online	18-88	1 041	PHQ-9	≥10	22.8%
Castelli et al 2020[175]	Italy	COVID-19	Cross-sectional	Online	Mean: 35.1	1 321	BDI-II	NR	31%
Shapiro et al 2020[308]	Israel	COVID-19	Cross-sectional	Online	18-90	503	PHQ-2	≥3	12.5%
Palgi et al 2020[71]	Israel	COVID-19	Cross-sectional	Online	≥18	1 059	PHQ-9	≥10	14.4%
Gualano et al 2020[151]	Italy	COVID-19	Cross-sectional	Online	≥18	1 515	PHQ-2	≥3	24.7%
Landi et al 2020[268]	Italy	COVID-19	Cross-sectional	Online	≥18	944	PHQ-9	≥10	23.4%
Pakenham et al 2020[269]	Italy	COVID-19	Cross-sectional	Online	≥18	1 035	PHQ-9	≥10	21.7%
Mollaioli et al 2020[155]	Italy	COVID-19	Cross-sectional	Online	≥18	6 821	PHQ-9	≥10	30.0%
Sugaya et al 2020[309]	Japan	COVID-19	Cross-sectional	Online	≥18	11 333	PHQ-9	≥10	17.9%
Stickley et al 2020[310]	Japan	COVID-19	Cross-sectional	Online	≥18	2 000	PHQ-9	≥10	17.4%

Ueda et al 2020[160]	Japan	COVID-19	Cross-sectional	Online	≥18	2 000	PHQ-9	≥10	17.3%
Naser et al 2020[145]	Jordan	COVID-19	Cross-sectional	Online	≥18	1 798	PHQ-9	≥10	32.1%
Burhamah et al 2020[148]	Kuwait	COVID-19	Cross-sectional	Online	≥18	4 132	PHQ-9	≥10	30.1%
Janati Idrissi et al 2020[158]	Morocco	COVID-19	Cross-sectional	Online	Mean: 35	827	BDI	≥8	14.0%
Gupta et al 2020[271]	Nepal	COVID-19	Cross-sectional	Online	NR	62	PHQ-9	≥10	8.1%
Ghimire et al 2020[311]	Nepal	COVID-19	Cross-sectional	Online	≥18	556	WHO-5	≤13	40.1%
Shrestha et al 2020[312]	Nepal	COVID-19	Cross-sectional	Online	NR	556	WHO-5	≤13	40.1%
Havnen et al 2020[272]	Norway	COVID-19	Cross-sectional	Online	≥18	617	PHQ-9	≥10	20.6%
Al Sinawi et al 2020[180]	Oman	COVID-19	Cross-sectional	Online	≥18	1 538	PHQ-9	≥12	35.0%
Bodecka et al 2020[313]	Poland	COVID-19	Cross-sectional	Online	15-73	230	PHQ-9	≥10	45.6%
Passos et al 2020[290]	Portugal	COVID-19	Cross-sectional	Online	≥18	261	PHQ-2	≥3	22.6%
Alhalafi et al 2020[273]	Riyadh, Saudi Arabia	COVID-19	Cross-sectional	Online	≥18	651	PHQ-9	≥10	28.7%
Shatla et al 2020[159]	Saudi Arabia	COVID-19	Cross-sectional	Online	NR	1 921	HADS	NR	37.3%
Kim et al 2020[314]	South Africa	COVID-19	Cross-sectional	Online	≥25	221	CES-D	≥10	14.5%
Lee et al 2020[315]	Seoul, South Korea	COVID-19	Cross-sectional	Online	≥20	1 049	PHQ-2	≥3	29.6%
Kim et al 2020[316]	South Korea	COVID-19	Cross-sectional	Online	19-65	550	PHQ-9	≥10	20.2%
González-Sanguino et al 2020[276]	Spain	COVID-19	Cross-sectional	Online	18-80	3 480	PHQ-2	≥3	18.7%
Fullana et al 2020[277]	Spain	COVID-19	Cross-sectional	Online	≥18	5 545	PHQ-9	≥10	15.0%
Jacques-Avino et al 2020[69]	Spain	COVID-19	Cross-sectional	Online	≥18	7 053	PHQ-9	≥10	25.0%
Papandreou et al 2020[262]	Spain	COVID-19	Cross-sectional	Online	≥18	1 002	PHQ-9	≥10	13.6%
McCracken et al 2020[278]	Sweden	COVID-19	Cross-sectional	Online	≥18	1 212	PHQ-9	≥10	30.0%
Ozdemir et al 2020[279]	Turkey	COVID-19	Cross-sectional	Online	20-75	2 301	BDI	≥18	21.8%
Karasar et al 2020[317]	Turkey	COVID-19	Cross-sectional	Online	≥18	518	BDI	≥17	16.6%
Ustun 2020[318]	Turkey	COVID-19	Cross-sectional	Online	18-65	1 115	BDI	≥17	27.3%
Özdin et al 2020[280]	Turkey	COVID-19	Cross-sectional	Online	≥18	343	HADS	≥10	23.6%
Thomas et al 2020[157]	United Arab Emirates	COVID-19	Cross-sectional	Online	≥18	1 039	PHQ-8	≥10	58.4%
Dawson et al 2020[282]	United Kingdom	COVID-19	Cross-sectional	Online	18-76	555	PHQ-9	≥10	37.0%
Iob et al 2020[283]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	44 775	PHQ-9	≥10	29.5%
Jia et al 2020[70]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	3 097	PHQ-9	≥10	31.6%
Groarke et al 2020[284]	United Kingdom	COVID-19	Cross-sectional	Online	18-87	1 964	PHQ-9	≥10	34.0%
Pieh et al 2020[234]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	1 006	PHQ-9	≥10	41.2%
Rettie et al 2020[286]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	842	PHQ-9	≥10	25.8%
Shevlin et al 2020[89]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	2 025	PHQ-9	≥10	22.1 % (20.3–23.9)

Meyer et al 2020[287]	United States	COVID-19	Cross-sectional	Online	≥18	3 052	BDI-II	≥20	10.1%
Lee et al 2020[274]	United States	COVID-19	Cross-sectional	Online	18-65	256	PHQ-2	≥3	53.9%
Czeisler et al 2020[115]	United States	COVID-19	Cross-sectional	Online	≥18	5 470	PHQ-2	≥3	24.3%
Kolacz et al 2020[84]	United States	COVID-19	Cross-sectional	Online	≥18	1 666	PHQ-2	≥3	28.7%
Lee et al 2020[288]	United States	COVID-19	Cross-sectional	Online	≥18	453	PHQ-2	≥3	45.3%
Bryan et al 2020[77]	United States	COVID-19	Cross-sectional	Online	≥18	10 625	PHQ-9	≥14	19.5%
Knell et al 2020[319]	United States	COVID-19	Cross-sectional	Online	≥18	1 809	PHQ-9	≥6	18.5%
Sherman et al 2020[162]	United States	COVID-19	Cross-sectional	Online	≥18	591	PHQ-9	≥10	21%
Taylor et al 2020[291]	United States and Canada	COVID-19	Cross-sectional	Online	18-94	6 854	PHQ-2	≥3	22%
Lee et al 2020[296]	International	COVID-19	Cross-sectional	Online	18-65	1 237	PHQ-9	≥10	40.3%
Barzilay et al 2020[73]	International	COVID-19	Cross-sectional	Online	18-79	1 350	PHQ-2	≥3	16.0%
Nelson et al 2020[292]	International	COVID-19	Cross-sectional	Online	≥18	2 062	PHQ-2	≥3	44.5%
Pouso et al 2020[68]	International	COVID-19	Cross-sectional	Online	≥18	5 218	PHQ-2	≥3	27.8%
Généreux et al 2020[294]	International	COVID-19	Cross-sectional	Online	≥18	8 806	PHQ-9	≥10	25.5%
Prout et al 2020[295]	International	COVID-19	Cross-sectional	Online	≥18	2 236	PHQ-9	≥10	7.0%
Ng et al 2020[297]	Hong Kong	COVID-19	Case-control	Telephone	Mean: 57.8	45	HADS	≥11	6.7%

#### **Post-traumatic Stress Disorder**

Planchuelo-Gomez et al 2020[320]	Spain	COVID-19	Longitudinal	Online	≥18	3 668	IES	NR	T1: NR, T2: 11.8%
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online	≥18	6 327	M.I.N.I.	NR	Before: 1.0% (0.6-1.3); During: 1.7% (1.2-2.2)
Shuwiekh et al 2020[321]	Arab countries	COVID-19	Cross-sectional	Online	≥18	1 374	PCL-5	≥31	36.6%
Gurvich et al 2020[322]	Australia	COVID-19	Cross-sectional	Online	≥18	1 495	IES-R	≥33	47.0%
Traunmuller et al 2020[323]	Austria	COVID-19	Cross-sectional	Online	16-82	4 126	IES-R	≥33	43.3%
Campos et al 2020[176]	Brazil	COVID-19	Cross-sectional	Online	≥18	12 196	IES-R	≥33	35.2%
Cao et al 2020[324]	Shanghai, China	COVID-19	Cross-sectional	NR	≥18	430	IES	≥26	68.4%
Ma et al 2020[325]	China	COVID-19	Cross-sectional	Online	≥18	728	IES	≥26	25.5%
Zhang et al 2020[326]	Liaoning, China	COVID-19	Cross-sectional	Online	Mean: 37.7	263	IES	≥26	7.6%
Wang et al 2020[327]	China	COVID-19	Cross-sectional	Paper	12-59	1 210	IES-R	≥33	53.8%
Jiang et al 2020[328]	China	COVID-19	Cross-sectional	Online	Mean: 25.8	338	PCL-5	≥38	3.5%
Liu et al 2020[329]	Wuhan and surrounding cities, China	COVID-19	Cross-sectional	Online	≥18	285	PCL-5	≥33	7%
Lu et al 2020[167]	Wuhan, China	COVID-19	Cross-sectional	Online	≥18	1 035	PCL-C	≥50	4.5%
Zhao et al 2020[249]	China	COVID-19	Cross-sectional	Online	NR	515	PCL-5	DSM diagnostic algorithm	5.6%

Ren et al 2020[243]	China	COVID-19	Cross-sectional	Online	NR	458	PCL-5	NR	7.0%
Lau et al 2020[252]	Hong Kong	COVID-19	Cross-sectional	Online	18-79	761	IES-R	≥33	28.6%
El-Zoghby et al 2020[330]	Egypt	COVID-19	Cross-sectional	Online	≥18	510	IES-R	≥33	52.0%
Ahuja et al 2020[331]	India	COVID-19	Cross-sectional	Online	≥18	325	IES	≥26	100.0%
Singh et al 2020[307]	India	COVID-19	Cross-sectional	Online	≥18	234	IES-R	>33	13.5%
Varshney et al 2020[332]	India	COVID-19	Cross-sectional	Online	18-82	653	IES-R	≥33	18.2%
Mohammadi et al 2020[81]	Iran	COVID-19	Cross-sectional	Online	NR	1 881	IES-R	≥33	52.7%
Karatzias et al 2020[178]	Ireland	COVID-19	Cross-sectional	Online	≥18	1 041	ITQ	≥2	17.7%
Lahav et al 2020[333]	Israel	COVID-19	Cross-sectional	Online	≥18	976	PCL-5	≥33	11.5%
Forte et al 2020[82]	Italy	COVID-19	Cross-sectional	Online	18-89	2 291	IES-R	≥33	27.7%
Costantini et al 2020[179]	Italy	COVID-19	Cross-sectional	Online	21-71	329	IES-R	≥50	13.4%
Di Giuseppe et al 2020[334]	Italy	COVID-19	Cross-sectional	Online	≥18	5 683	IES-R	≥33	29.4%
Micarelli et al 2020[335]	Italy	COVID-19	Cross-sectional	Online	23-72	1 380	IES-R	≥33	21.5%
Forte et al 2020[336]	Italy	COVID-19	Cross-sectional	Online	18-74	2 286	PCL-5	DSM diagnostic algorithm	27.5%
Castelli et al 2020[175]	Italy	COVID-19	Cross-sectional	Online	Mean: 35.1	1 321	PCL-5	NR	20%
Cortés-Álvarez et al 2020[337]	Mexico	COVID-19	Cross-sectional	Online	≥18	1 105	IES-R	≥33	50.3%
Ramirez et al 2020[177]	Mexico	COVID-19	Cross-sectional	Online	≥18	3 932	IES-R	≥35	27.7%
Tee et al 2020[338]	Philippines	COVID-19	Cross-sectional	Online	≥12	1 879	IES-R	≥34	16.3%
Paulino et al 2020[339]	Portugal	COVID-19	Cross-sectional	Online	18-95	10 529	IES-R	≥33	49.2%
Alkhamees et al 2020[340]	Saudi Arabia	COVID-19	Cross-sectional	Online	≥18	1 160	IES-R	≥33	23.6%
Alshehri et al 2020[85]	Saudi Arabia	COVID-19	Cross-sectional	Online	≥18	1 374	PCL-S	≥45	19.6%
Lee et al 2020[315]	Seoul, South Korea	COVID-19	Cross-sectional	Online	≥20	1 049	PC-PTSD-5	≥3	14.0%
Odrizola-Gonzalez et al 2020[341]	Spain	COVID-19	Cross-sectional	Online	≥18	3 550	IES-R	NR	47.5%
Rodriguez-Rey et al 2020[342]	Spain	COVID-19	Cross-sectional	Online	≥18	3 055	IES-R	≥33	36.6%
Rodriguez-Rey et al 2020[343]	Spain	COVID-19	Cross-sectional	Online	18-88	3 055	IES-R	≥33	36.6%
Fekih-Romdhane et al 2020[83]	Tunisia	COVID-19	Cross-sectional	Online	≥18	603	IES-R	≥33	33.0%
Groarke et al 2020[284]	United Kingdom	COVID-19	Cross-sectional	Online	18-87	1 964	PCL-5	≥34	19.4%
Czeisler et al 2020[115]	United States	COVID-19	Cross-sectional	Online	≥18	5 470	IES-6	≥1.75 out of 4	26.3%
Kolacz et al 2020[84]	United States	COVID-19	Cross-sectional	Online	≥18	1 666	PCL-5	DSM Diagnostic algorithm	27.8%

Sherman et al 2020[162]	United States	COVID-19	Cross-sectional	Online	≥18	591	PCL-5	≥33	5.4%
Le et al 2020[344]	Vietnam	COVID-19	Cross-sectional	Online	Mean: 35	1 423	IES-R	≥33	10.8%
Prout et al 2020[295]	International	COVID-19	Cross-sectional	Online	≥18	2 236	IES-R	≥33	4.3%
Hao et al 2020[345]	Chongqing, China	COVID-19	Case-control	Online	Mean: 33.1	109	IES-R	≥24	13.8%
Guo et al 2020[346]	China	COVID-19	Case-control	Online	18-75	103	PCL-5	≥33	1.9%
Sim et al 2010[347]	Singapore	SARS	Cross-sectional	Paper	Mean: 36.6	415	IES-R	DSM diagnostic algorithm	25.8%

<b>Psychological Distress</b>									
Kikuchi et al 2020[185]	Japan	COVID-19	Longitudinal	Online	≥18	2 078	K6	≥13	Before: 9.3% During: 11.3%
Sibley et al 2020[348]	New Zealand	COVID-19	Longitudinal	Online	NR	1 003	K6	≥13	Before: 6.6%; After: 5.8%
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.	NR	Before: 20.0% (18.6-21.4); During: 29.6% (27.9-31.4)
Nicolson et al 2020[349]	New Zealand	COVID-19	Serial cross-sectional	Online	≥18	During: 1 190; After: 925	PHQ-4	NR	During: 8%; After: 5%
Gray et al 2020[350]	United Kingdom	COVID-19	Serial cross-sectional	Online	≥16	Before: 11 922; During: 12 989	K10	≥25	36.9%
Twenge et al 2020[351]	United States	COVID-19	Serial cross-sectional	In-person; Online	≥18	Before: 2 032; During: 19330	K6	≥13	Before: 3.4%; During: 27.7%
Fernandez et al 2020[352]	Argentina	COVID-19	Cross-sectional	Online	18-92	4 408	BSI-53	T≥63	27.1%
Rahman et al 2020[182]	Australia	COVID-19	Cross-sectional	Online	≥18	587	K10	≥22	33.3%
Duarte et al 2020[88]	Rio Grande do Sul, Brazil	COVID-19	Cross-sectional	Online	18-75	799	SRQ-20	≥7	40.9%
Qiu et al 2020[213]	China	COVID-19	Cross-sectional	Online	NR	52 730	CPDI	≥52	5.1%
Zhong et al 2020[166]	China	COVID-19	Cross-sectional	Online	16-87	7 741	GHQ-12	≥3	30.0%
Yu et al 2020[353]	China	COVID-19	Cross-sectional	Online	≥18	1 588	K6	≥13	22.8%
Goodwin et al 2020[184]	China	COVID-19	Cross-sectional	Online	≥18	1 135	K6	≥13	19.1%
Ben-Ezra et al 2020[93]	China	COVID-19	Cross-sectional	Online	18-59	1 134	K6	≥13	19.1%
Goodwin et al 2020[354]	China	COVID-19	Cross-sectional	Online	Mean: 31.0	1 134	K6	≥13	19.1%
Liu et al 2020[304]	China	COVID-19	Cross-sectional	Online	NR	455	SCL-90	≥160	7.7%
Tian et al 2020[355]	China	COVID-19	Cross-sectional	Online	13-76	1 060	SCL-90	≥63	12.5%
Zhu et al 2020[90]	China	COVID-19	Cross-sectional	Online	NR	836	SRQ-20	≥7	13.4%
Lau et al 2020[356]	Hong Kong	COVID-19	Cross-sectional	Online	18-79	761	PHQ-4	≥6	17.8%
El-Abasiri et al 2020[357]	Egypt	COVID-19	Cross-sectional	Online	≥18	257	CPDI	≥52	21.8%
Liu et al 2020[358]	Germany	COVID-19	Cross-sectional	Online	18-81	1 007	CPDI	≥52	3.6%
Petzold et al 2020[255]	Germany	COVID-19	Cross-sectional	Online	18-99	6 509	PHQ-4	≥6	25%
Venugopal et al 2020[359]	India	COVID-19	Cross-sectional	Online	≥18	453	GHQ-28	≥24	42.2%
Jahanshahi et al 2020[360]	Iran	COVID-19	Cross-sectional	Online	≥18	1 058	CPDI	≥52	61.1%

Mohammadi et al 2020[81]	Iran	COVID-19	Cross-sectional	Online	NR	1 881	GHQ-28	≥6	38.5%
Costantini et al 2020[179]	Italy	COVID-19	Cross-sectional	Online	21-71	329	CPDI	≥52	4.9%
Pakenham et al 2020[269]	Italy	COVID-19	Cross-sectional	Online	≥18	1 035	CPDI	≥52	1.6%
Fiorillo et al 2020[361]	Italy	COVID-19	Cross-sectional	Online	≥18	20 720	GHQ-12	≥4	91.2%
Di Giuseppe et al 2020[334]	Italy	COVID-19	Cross-sectional	Online	≥18	5 683	SCL-90	GSI>0.8	35.6%
Moccia et al 2020[362]	Italy	COVID-19	Cross-sectional	Online	≥18	500	K10	≥25	18.6%
Forte et al 2020[82]	Italy	COVID-19	Cross-sectional	Online	≥18	2 291	SCL-90	≥0.9	31.4%
Sugaya et al 2020[309]	Japan	COVID-19	Cross-sectional	Online	18-89	11 333	K6	≥13	11.5%
Shrestha et al 2020[363]	Nepal	COVID-19	Cross-sectional	Online	17-83	410	CPDI	≥52	0.5%
Every-Palmer et al 2020[183]	New Zealand	COVID-19	Cross-sectional	Online	18-90	2 010	K10	≥12	30.3%
Al Sinawi et al 2020[180]	Oman	COVID-19	Cross-sectional	Online	≥18	1 538	GAD-7 and PHQ-9	GAD-7≥10 or PHQ-9≥12	30.0%
Perez et al 2020[364]	Spain	COVID-19	Cross-sectional	Online	18-91	1 781	BSI-18	GSI≥63	24.6%
Dominguez-Salas et al 2020[87]	Spain	COVID-19	Cross-sectional	Online	≥18	4 180	GHQ-12	≥3	72.0%
Gómez-Salgado et al 2020[86]	Spain	COVID-19	Cross-sectional	Online	≥18	4 180	GHQ-12	≥3	72.0%
Shevlin et al 2020[89]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	2 025	GAD-7 and PHQ-9	both≥10	27.6%
Goodwin et al 2020[184]	United Kingdom	COVID-19	Cross-sectional	Online	≥18	1 293	K6	≥13	16.6%
Ben-Ezra et al 2020[92]	United Kingdom	COVID-19	Cross-sectional	Online	18-75	1 293	K6	≥13	16.6%
Pouso et al 2020[68]	International	COVID-19	Cross-sectional	Online	≥18	5 218	PHQ-4	≥6	22.2%
Schnell et al 2020[365]	International	COVID-19	Cross-sectional	Online	≥18	1 538	PHQ-4	≥6	19%
Sim et al 2010[347]	Singapore	SARS	Cross-sectional	Paper	Mean: 36.6	415	GHQ-28	≥5	22.9%
<b>Acute Stress Disorder</b>									
Shi et al 2020[94]	China	COVID-19	Cross-sectional	Online	≥18	56 932	ASDS	Dissociation score ≥9 and Cumulative reexperiencing, avoidance, and arousal score ≥28	24.4%
Lin et al 2020[241]	China	COVID-19	Cross-sectional	Online	NR	5 641	ASDS	Disassociation ≥5, and total score≥28	15.8%

#### Agoraphobia

Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.	NR	Before: 5.2% (4.4-5.9); During: 8.0% (7.0-9.0)
<b>Alcohol Use Disorders</b>									
Ahmed et al 2020[237]	China	COVID-19	Cross-sectional	Online	Mean: 33.5	1 074	AUDIT	≥20	1.6%
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.	NR	Before: 10.8% (9.8-11.9); During: 9.9% (8.7-11.0)
Chodkiewicz et al 2020[366]	Poland	COVID-19	Cross-sectional	Online	18-68	443	AUDIT	≥20	0.9%
<b>Obsessive-Compulsive disorder</b>									
Munk et al 2020[95]	Germany	COVID-19	Cross-sectional	Online	≥18	949	OCI-R	≥21	21.4%
Fiorillo et al 2020[361]	Italy	COVID-19	Cross-sectional	Online	≥18	20 720	OCI-R	≥21	11.3%
<b>Panic Disorder</b>									
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.	NR	Before: 0.2% (0.04-0.36); During: 0.9% (0.53-1.18)
<b>Social Phobia</b>									
Winkler et al 2020[98]	Czech	COVID-19	Serial cross-sectional	Online; Telephone	≥18	6 327	M.I.N.I.	NR	Before: 1.7% (1.2-2.1); During: 2.5% (1.9-3.1)
<b>Suicidality (Suicidal Ideation)</b>									
Ren et al 2020[243]	China	COVID-19	Cross-sectional	Online	NR	1 172	M.I.N.I.	NR	2.8%
Caballero-Domínguez et al 2020[97]	Colombia	COVID-19	Cross-sectional	Online	18-76	700	CES-D	≥9	7.6%
Fiorillo et al 2020[361]	Italy	COVID-19	Cross-sectional	Online	≥18	20 720	SIDAS	≥21	14.2%
Gratz et al 2020[367]	United States	COVID-19	Cross-sectional	Online	20-74	500	DSI-SS	≥3	11.6%
<b>Suicidality (Suicide Attempts)</b>									
Fitzpatrick et al 2020[368]	United States	COVID-19	Cross-sectional	Online	≥18	10 368	SBQ-R	≥5	25.0%
Bryan et al 2020[77]	United States	COVID-19	Cross-sectional	Online	≥18	10 625	SITBI	Positive response	1.2%

ASDS=Acute Stress Disorder Scale. AUDIT=Alcohol Use Disorder Identification Test. BAI=Beck Anxiety Inventory. BDI=Beck Depression Inventory. BDI-II=Beck Depression Inventory-II. BSI-18=Brief Symptom Inventory-18. BSI-53=Brief Symptom Inventory-53. CES-D=Centre for Epidemiological Studies-Depression Scale. COVID-19=Coronavirus Disease 2019. CPDI=COVID-19 Peri-traumatic Distress Index. DSI-SS=Depression Symptom Index-Suicide Subscale. GAD-2=Generalized Anxiety Disorder-2. GAD-7=Generalized Anxiety Disorder-7. GHQ-12=General Health Questionnaire-12. GHQ-28=General Health Questionnaire-28. HADS=Hospital Anxiety and Depression Scale. HAM-A=Hamilton Anxiety Rating Scale. IES=Impact of Event Scale. IES-6=Impact of Event Scale-6. IES-R=Impact of Event Scale-Revised. ITQ=International Trauma Questionnaire. K6=Kessler Psychological Distress Scale-6. K10=Kessler Psychological Distress Scale-10. M.I.N.I.=Mini-International Neuropsychiatric Interview. OCI-R=Obsessive-Compulsive Inventory-Revised. PC-PTSD-5=Primary Care Post-Traumatic Stress Disorder Screen for DSM-5. PCL-5= Post-traumatic Stress Disorder Checklist for DSM-5. PCL-C=Post-traumatic Stress Disorder Checklist-Civilian Version. PCL-S=Post-traumatic Stress Disorder Checklist-Specific Version. PHQ-2=Patient Health Questionnaire-2. PHQ-4=Patient Health Questionnaire-4. PHQ-8=Patient Health Questionnaire-8. PHQ-9=Patient Health Questionnaire-9. PROMIS-ED-SF=PROMIS-Emotional Distress-Short Form. SARS=severe acute respiratory syndrome. SAS=Zung's Self-Rating Anxiety Scale. SBQ-R=Suicide Behaviors Questionnaire-Revised. SCL-90=Symptom Checklist-90. SDS=Zung's Self-Rating Depression Scale. SIDAS=Suicidal Ideation Attributes Scale. SITBI=Self-Injurious Thoughts and Behaviors Interview. SRQ-20=Self-Reporting Questionnaire-20. WHO-5=Five-item World Health Organization-Well-Being Index. NA=not applicable. NR=not reported.

**Table S9. Study quality ratings based on adapted Newcastle-Ottawa Scale**

Study	Cross-Sectional Studies							
	Total NOS Score	Quality (Low 0-3, Medium 4-6, High 7-9)	Representativeness of exposed sample	Selection of nonexposed sample	Ascertainment of exposure	Comparability (controlled for age)	Comparability (controlled for additional factors)	Assessment of outcome
Abba-Aji et al 2020[233]	2	Low	+	-	-	-	-	+
Ahmed et al 2020[237]	2	Low	+	-	-	-	-	+
Ahuja et al 2020[331]	2	Low	+	-	-	-	-	+
Al Sinawi et al 2020[180]	4	Medium	+	-	-	+	+	+
Alhalafi 2020[273]	4	Medium	+	-	-	+	+	+
Alkhamees et al 2020[340]	2	Low	+	-	-	-	-	+
Alshehri et al 2020[85]	4	Medium	+	-	-	+	+	+
Alzueta et al 2020[293]	4	Medium	+	-	-	+	+	+
Badellino et al 2020[147]	4	Medium	+	-	-	+	+	+
Barzilay et al 2020[73]	4	Medium	+	-	-	+	+	+
Bäuerle et al 2020[254]	4	Medium	+	-	-	+	+	+
Bäuerle et al 2020[256]	2	Low	+	-	-	-	-	+
Ben-Ezra et al 2020[92]	4	Medium	+	-	-	+	+	+
Ben-Ezra et al 2020[93]	4	Medium	+	-	-	+	+	+
Benke et al[257]	4	Medium	+	-	-	+	+	+
Benke et al 2020[67]	4	Medium	+	-	-	+	+	+
Bodecka et al 2020[313]	2	Low	+	-	-	-	-	+
Bressington et al 2020[75]	4	Medium	+	-	-	+	+	+



Bruine de Bruin 2020[29]	4	Medium	+	-	-	+	+	+
Bryan et al 2020[77]	4	Medium	+	-	-	+	+	+
Burhamah et al 2020[148]	4	Medium	+	-	-	+	+	+
Caballero-Domínguez et al 2020[97]	3	Low	+	-	-	+	+	-
Campos et al 2020[176]	4	Medium	+	-	-	+	+	+
Cao et al 2020[324]	2	Low	+	-	-	-	-	+
Casagrande et al 2020[149]	4	Medium	+	-	-	+	+	+
Castelli et al 2020[175]	4	Medium	+	-	-	+	+	+
Cénat et al 2020[45]	4	Medium	+	-	-	+	+	+
Chen et al 2020[305]	4	Medium	+	-	-	+	+	+
Chodkiewicz et al 2020[366]	2	Low	+	-	-	-	-	+
Choi et al 2020[30]	4	Medium	+	-	-	+	+	+
Cortés-Álvarez et al 2020[337]	2	Low	+	-	-	-	-	+
Costantini et al 2020[179]	4	Medium	+	-	-	+	+	+
Czeisler et al 2020[115]	4	Medium	+	-	-	+	+	+
Dai et al 2020[369]	4	Medium	+	-	-	+	+	+
Dawel et al 2020[230]	4	Medium	+	-	-	+	+	+
Dawson et al 2020[282]	4	Medium	+	-	-	+	+	+
Di Giuseppe et al 2020[334]	4	Medium	+	-	-	+	+	+
Dominguez-Salas et al 2020[87]	4	Medium	+	-	-	+	+	+
Duarte et al 2020[88]	4	Medium	+	-	-	+	+	+
El-Abasiri et al 2020[357]	4	Medium	+	-	-	+	+	+

Elhai et al 2020[251]	2	Low	+	-	-	-	-	+
El-Zoghby et al 2020[330]	4	Medium	+	-	-	+	+	+
Elton-Marshall et al 2020 [61]	4	Medium	+	-	-	+	+	+
Ettman et al 2020 [35]	4	Medium	+	-	-	+	+	+
Ettman et al 2020 [36]	4	Medium	+	-	-	+	+	+
Every-Palmer et al 2020[183]	4	Medium	+	-	-	+	+	+
Fekih-Romdhane et al 2020[83]	4	Medium	+	-	-	+	+	+
Fernandez et al 2020[352]	4	Medium	+	-	-	+	+	+
Fiorillo et al 2020[361]	4	Medium	+	-	-	+	+	+
Fisher et al 2020[165]	4	Medium	+	-	-	+	+	+
Fitzpatrick et al 2020[289]	2	Low	+	-	-	-	-	+
Fitzpatrick et al 2020[368]	4	Medium	+	-	-	+	+	+
Forte et al 2020[336]	2	Low	+	-	-	-	-	+
Forte et al 2020[82]	4	Medium	+	-	-	+	+	+
Fu et al 2020[150]	4	Medium	+	-	-	+	+	+
Fullana et al 2020[277]	4	Medium	+	-	-	+	+	+
Gao et al 2020[64]	4	Medium	+	-	-	+	+	+
Garre-Olmo et al 2020[39]	4	Medium	+	-	-	+	+	+
Généreux et al 2020[294]	4	Medium	+	-	-	+	+	+
Ghimire et al 2020[311]	2	Low	+	-	-	-	-	+
Gómez-Salgado et al 2020[86]	4	Medium	+	-	-	+	+	+
González-Sanguino et al 2020[276]	4	Medium	+	-	-	+	+	+
Goodwin et al 2020[184]	4	Medium	+	-	-	+	+	+

Goodwin et al 2020[354]	4	Medium	+	-	-	+	+	+
Gratz et al 2020[367]	3	Low	+	-	-	+	+	-
Gray et al 2020[350]	2	Low	+	-	-	-	-	+
Grey et al 2020[370]	4	Medium	+	-	-	+	+	+
Groarke et al 2020[284]	4	Medium	+	-	-	+	+	+
Grover et al 2020[265]	2	Low	+	-	-	-	-	+
Gualano et al 2020[151]	4	Medium	+	-	-	+	+	+
Guo et al 2020[172]	4	Medium	+	-	-	+	+	+
Guo et al 2020[91]	4	Medium	+	-	-	+	+	+
Gupta et al 2020[271]	2	Low	+	-	-	-	-	+
Gupta et al 2020[264]	2	Low	+	-	-	-	-	+
Gurvich et al 2020[322]	4	Medium	+	-	-	+	+	+
Hammarberg et al 2020[152]	4	Medium	+	-	-	+	+	+
Harris et al 2020[48]	4	Medium	+	-	-	+	+	+
Havnen et al 2020[272]	4	Medium	+	-	-	+	+	+
Hetkamp et al 2020[258]	2	Low	+	-	-	-	-	+
Holingue et al 2020[31]	4	Medium	+	-	-	+	+	+
Hossain et al 2020[163]	4	Medium	+	-	-	+	+	+
Hou et al 2020[238]	4	Medium	+	-	-	+	+	+
Huang et al 2020[168]	4	Medium	+	-	-	+	+	+
Huang et al 2020[74]	4	Medium	+	-	-	+	+	+
Hyland et al 2020[181]	4	Medium	+	-	-	+	+	+
Iob et al 2020[283]	2	Low	+	-	-	-	-	+

Iob et al 2020[78]	4	Medium	+	-	-	+	+	+
Islam et al 2020[153]	4	Medium	+	-	-	+	+	+
Jackson et al 2020[58]	4	Medium	+	-	-	+	+	+
Jacques-Avino et al 2020[69]	4	Medium	+	-	-	+	+	+
Jahanshahi et al 2020[360]	4	Medium	+	-	-	+	+	+
Jalloh et al 2018[42]	4	Medium	+	-	-	+	+	+
Janati Idrissi et al 2020[158]	4	Medium	+	-	-	+	+	+
Jia et al 2020[70]	4	Medium	+	-	-	+	+	+
Jiang et al 2020[303]	4	Medium	+	-	-	+	+	+
Jiang et al 2020[328]	2	Low	+	-	-	-	-	+
Kämpfen et al 2020[49]	4	Medium	+	-	-	+	+	+
Karasar et al 2020[317]	2	Low	+	-	-	-	-	+
Karatzias et al 2020[178]	4	Medium	+	-	-	+	+	+
Kim et al 2020[316]	2	Low	+	-	-	-	-	+
Kim et al 2020[314]	4	Medium	+	-	-	+	+	+
Knell et al 2020[319]	2	Low	+	-	-	-	-	+
Ko et al 2006[40]	4	Medium	+	-	-	+	+	+
Kolacz et al 2020[84]	4	Medium	+	-	-	+	+	+
Lahav et al 2020[333]	4	Medium	+	-	-	+	+	+
Landi et al 2020[268]	4	Medium	+	-	-	+	+	+
Lau et al 2005[43]	4	Medium	+	-	-	+	+	+
Lau et al 2006[44]	4	Medium	+	-	-	+	+	+
Lau et al 2020[252]	4	Medium	+	-	-	+	+	+

Lau et al 2020[356]	4	Medium	+	-	-	+	+	+
Le et al 2020[344]	4	Medium	+	-	-	+	+	+
Lee et al 2020[371]	4	Medium	+	-	-	+	+	+
Lee et al 2020[296]	4	Medium	+	-	-	+	+	+
Lee et al 2020[274]	4	Medium	+	-	-	+	+	+
Lee et al 2020[315]	4	Medium	+	-	-	+	+	+
Lee et al 2020[173]	4	Medium	+	-	-	+	+	+
Lei et al 2020[248]	4	Medium	+	-	-	+	+	+
Leske et al 2020[59]	4	Medium	+	-	-	+	+	+
Li et al 2020[62]	4	Medium	+	-	-	+	+	+
Li et al 2020[50]	4	Medium	+	-	-	+	+	+
Li et al 2020[240]	4	Medium	+	-	-	+	+	+
Li et al 2020[41]	4	Medium	+	-	-	+	+	+
Liang et al 2020[244]	2	Low	+	-	-	-	-	+
Lin et al 2020[241]	2	Low	+	-	-	-	-	+
Liu et al 2020[329]	4	Medium	+	-	-	+	+	+
Liu et al 2020[358]	2	Low	+	-	-	-	-	+
Liu et al 2020[304]	2	Low	+	-	-	-	-	+
Liu et al 2020[247]	4	Medium	+	-	-	+	+	+
Liu et al 2020[301]	4	Medium	+	-	-	+	+	+
Lu et al 2020[167]	4	Medium	+	-	-	+	+	+
Ma et al 2020[325]	4	Medium	+	-	-	+	+	+
Makhashvili et al 2020[72]	4	Medium	+	-	-	+	+	+

Martinez et al 2020[154]	4	Medium	+	-	-	+	+	+
Massad et al 2020[270]	4	Medium	+	-	-	+	+	+
McCracken et al 2020[278]	4	Medium	+	-	-	+	+	+
McGinty et al 2020[51]	4	Medium	+	-	-	+	+	+
Meyer et al 2020[287]	4	Medium	+	-	-	+	+	+
Micarelli et al 2020[335]	2	Low	+	-	-	-	-	+
Mirhosseini et al 2020[267]	4	Medium	+	-	-	+	+	+
Moccia et al 2020[362]	4	Medium	+	-	-	+	+	+
Mohammadi et al 2020[81]	4	Medium	+	-	-	+	+	+
Mollaioli et al 2020[155]	4	Medium	+	-	-	+	+	+
Munk et al 2020[95]	4	Medium	+	-	-	+	+	+
Naser et al 2020[145]	4	Medium	+	-	-	+	+	+
Nelson et al 2020[292]	4	Medium	+	-	-	+	+	+
Ni et al 2020[66]	4	Medium	+	-	-	+	+	+
Ni et al 2020[164]	4	Medium	+	-	-	+	+	+
Nicolson et al 2020[349]	4	Medium	+	-	-	+	+	+
Nwachukwu et al 2020[236]	4	Medium	+	-	-	+	+	+
Odrizola-Gonzalez et al 2020[341]	4	Medium	+	-	-	+	+	+
Ozdemir et al 2020[275]	4	Medium	+	-	-	+	+	+
Ozdemir et al 2020[279]	4	Medium	+	-	-	+	+	+
Özdin et al 2020[280]	3	Low	+	-	-	-	+	+
Pakenham et al 2020[269]	4	Medium	+	-	-	+	+	+
Palgi et al 2020[71]	4	Medium	+	-	-	+	+	+

Papandreou et al 2020[262]	4	Medium	+	-	-	+	+	+
Parimala et al 2020[263]	2	Low	+	-	-	-	-	+
Parlapani et al 2020[261]	2	Low	+	-	-	-	-	+
Passos et al 2020[290]	4	Medium	+	-	-	+	+	+
Paulino et al 2020[339]	2	Low	+	-	-	-	-	+
Peng et al 2010[54]	4	Medium	+	-	-	+	+	+
Peng et al 2020[302]	4	Medium	+	-	-	+	+	+
Peretti-Watel et al 2020[65]	4	Medium	+	-	-	+	+	+
Perez et al 2020[364]	4	Medium	+	-	-	+	+	+
Petzold et al 2020[255]	2	Low	+	-	-	-	-	+
Pieh et al 2020[234]	3	Low	+	-	-	+	-	+
Pieh et al 2020[285]	3	Low	+	-	-	+	-	+
Pieh et al 2020[235]	3	Low	+	-	-	+	-	+
Pouso et al 2020[68]	4	Medium	+	-	-	+	+	+
Prout et al 2020[295]	4	Medium	+	-	-	+	+	+
Qian et al 2020[32]	4	Medium	+	-	-	+	+	+
Qin et al 2020[60]	4	Medium	+	-	-	+	+	+
Qiu et al 2020[213]	4	Medium	+	-	-	+	+	+
Rahman et al 2020[182]	4	Medium	+	-	-	+	+	+
Ramirez et al 2020[177]	4	Medium	+	-	-	+	+	+
Ren et al 2020[243]	2	Low	+	-	-	-	-	+
Ren et al[171]	4	Medium	+	-	-	+	+	+
Rettie et al 2020[286]	2	Low	+	-	-	-	-	+

Riehm et al 2020[56]	4	Medium	+	-	-	+	+	+
Rodríguez-Rey et al 2020[343]	4	Medium	+	-	-	+	+	+
Rodríguez-Rey et al 2020[342]	2	Low	+	-	-	-	-	+
Rossi et al 2020[156]	4	Medium	+	-	-	+	+	+
Schmitz et al 2020[299]	3	Low	+	-	-	+	-	+
Schnell et al 2020[365]	4	Medium	+	-	-	+	+	+
Shapiro et al 2020[308]	2	Low	+	-	-	-	-	+
Shatla et al 2020[159]	3	Low	+	-	-	-	+	+
Sherman et al 2020[162]	4	Medium	+	-	-	+	+	+
Shevlin et al 2020[281]	4	Medium	+	-	-	+	+	+
Shevlin et al 2020[89]	4	Medium	+	-	-	+	+	+
Shi et al 2020[94]	4	Medium	+	-	-	+	+	+
Shrestha et al 2020[312]	2	Low	+	-	-	-	-	+
Shrestha et al 2020[363]	4	Medium	+	-	-	+	+	+
Shukla et al 2020[266]	2	Low	+	-	-	-	-	+
Shuwiekh et al 2020[321]	2	Low	+	-	-	-	-	+
Sim et al 2010[347]	4	Medium	+	-	-	+	+	+
Singh et al 2020[307]	2	Low	+	-	-	-	-	+
Skapinakis et al 2020[76]	4	Medium	+	-	-	+	+	+
Skoda et al 2020[260]	2	Low	+	-	-	-	-	+
Slijivo et al 2020[169]	3	Low	+	-	-	-	+	+
Smith et al 2020[146]	4	Medium	+	-	-	+	+	+
Solomou et al 2020[253]	3	Low	+	-	-	-	+	+



Sønderskov et al 2020[300]	4	Medium	+	-	-	+	+	+
Stickley et al 2020[310]	4	Medium	+	-	-	+	+	+
Su et al 2020[245]	4	Medium	+	-	-	+	+	+
Sugaya et al 2020[309]	4	Medium	+	-	-	+	+	+
Tang et al 2020[170]	4	Medium	+	-	-	+	+	+
Taylor et al 2020[291]	4	Medium	+	-	-	+	+	+
Tee et al 2020[338]	2	Low	+	-	-	-	-	+
Thomas et al 2020[157]	4	Medium	+	-	-	+	+	+
Tian et al 2020[355]	2	Low	+	-	-	-	-	+
Traunmuller et al 2020[323]	2	Low	+	-	-	-	-	+
Teufel et al 2020[259]	2	Low	+	-	-	-	-	+
Twenge et al 2020[351]	4	Medium	+	-	-	+	+	+
Ueda et al 2020[160]	4	Medium	+	-	-	+	+	+
Ustun 2020[318]	2	Low	+	-	-	-	-	+
Varshney et al 2020[332]	2	Low	+	-	-	-	-	+
Venugopal et al 2020[359]	2	Low	+	-	-	-	-	+
Voitsidis et al 2020[306]	2	Low	+	-	-	-	-	+
Wang et al 2020[144]	4	Medium	+	-	-	+	+	+
Wang et al 2020[79]	4	Medium	+	-	-	+	+	+
Wang et al 2020[327]	2	Low	+	-	-	-	-	+
Wasserman 1992[61]	4	Medium	+	-	-	+	+	+
Winkler et al 2020[98]	4	Medium	+	-	-	+	+	+
Wu et al 2020[246]	4	Medium	+	-	-	+	+	+

Yu et al 2020[353]	4	Medium	+	-	-	+	+	+
Zhang et al 2020[242]	3	Low	+	-	-	-	+	+
Zhang et al 2020[372]	2	Low	+	-	-	-	-	+
Zhang et al 2020[326]	4	Medium	+	-	-	+	+	+
Zhang et al 2020[174]	4	Medium	+	-	-	+	+	+
Zhang et al 2020[80]	4	Medium	+	-	-	+	+	+
Zhao et al 2020[249]	2	Low	+	-	-	-	-	+
Zhao et al 2020[161]	4	Medium	+	-	-	+	+	+
Zhao et al 2020[35]	4	Medium	+	-	-	+	+	+
Zhao et al 2020[34]	4	Medium	+	-	-	+	+	+
Zhong et al 2020[166]	4	Medium	+	-	-	+	+	+
Zhu et al 2020[90]	4	Medium	+	-	-	+	+	+
Zhu et al 2020[250]	2	Low	+	-	-	-	-	+

Cohort studies											
Study	Total NOS Score	Quality (Low 0-3, Medium 4-6, High 7-9)	Adequacy of case definition	Representativeness of cases	Selection of controls	Adequacy of control definition	Comparability (controlled for age)	Comparability (controlled for additional factors)	Ascertainment of exposure	Same method of ascertainment for cases and controls	Non-response rate
Bendau et al 2020[231]	6	Medium	+	-	-	+	+	+	+	+	-
Chandola et al 2020[46]	6	Medium	+	-	-	+	+	+	+	+	-
Daly et al 2020[36]	7	High	+	-	-	+	+	+	+	+	+
Daly et al 2020[47]	7	High	+	-	-	+	+	+	+	+	+
Gopal et al 2020[232]	7	High	+	-	-	+	+	+	+	+	+
Kikuchi et al 2020[185]	6	Medium	+	-	-	+	+	+	+	+	-
McGinty et al 2020[52]	7	High	+	-	-	+	+	+	+	+	+
Niedzwiedz et al 2020[53]	6	Medium	+	-	-	+	+	+	+	+	-
O'Connor et al 2020[96]	6	Medium	+	-	-	+	+	+	+	+	-
Pierce et al 2020[55]	7	High	+	-	-	+	+	+	+	+	+
Planchuelo-Gomez et al 2020[320]	6	Medium	+	-	-	+	+	+	+	+	-
Robinson et al 2020[57]	7	High	+	-	-	+	+	+	+	+	+
Sibley et al 2020[348]	6	Medium	+	-	-	+	+	+	+	+	-
Twenge et al 2020[33]	5	Medium	+	-	-	+	+	+	+	-	-

Case-control studies											
Study	Total NOS Score	Quality (Low 0-3, Medium 4-6, High 7-9)	Adequacy of case definition	Representativeness of cases	Selection of controls	Adequacy of control definition	Comparability (controlled for age)	Comparability (controlled for additional factors)	Ascertainment of exposure	Same method of ascertainment for cases and controls	Non-response rate
Guo et al 2020[346]	4	Medium	-	+	+	+	-	-	-	+	-
Hao et al 2020[345]	4	Medium	-	+	+	+	-	-	-	+	-
Ng et al 2020[297]	4	Medium	-	+	+	+	-	-	-	+	-
Salari et al 2020[298]	4	Medium	-	+	+	+	-	-	-	+	-

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